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THE LONDON JOURNAL OF BOTANY;

CONTAINING

FIGURES AND DESCRIPTIONS

OF

SUCH PLANTS AS RECOMMEND THEMSELVES BY THEIR NOVELTY, RARITY, HISTORY, OR USES;

TOGETHER WITH

BOTANICAL NOTICES AND INFORMATION,

AND

OCCASIONAL MEMOIRS OF EMINENT BOTANISTS;

BY

SIR W. J. HOOKER, K.H., D.C.L., F.R.A., & L.S.

VICE-PRESIDENT OF THE LINNÆAN SOCIETY; HONORARY MEMBER OF THE ROYAL IRISH ACADEMY; MEMBER OF THE IMPERIAL ACADEMY CÆSAR-LEOPOLD. NATURÆ CURIOSORUM; OF THE IMPERIAL SOCIETY CÆSAR. NATURÆ CURIOSORUM OF MOSCOW; OF THE ROYAL ACADEMIES OF SWEDEN, PRUSSIA, LUND; OF THE ACADEMIES OF PHILADELPHIA, NEW YORK, BOSTON; OF THE NAT. HIST. SOCIETY OF MONTREAL, &c. &c.
AND DIRECTOR OF THE ROYAL GARDENS OF KEW.

VOL. VI.

WITH TWENTY-FOUR PLATES.

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THE

LONDON JOURNAL OF BOTANY.

EDITED BY

SIR W. J. HOOKER, K.H., L.L.D., F.R.S., & L.S.

Sur le genre GODOYA *et ses analogues, avec des observations sur les limites des* OCHNACÉES, *et une revue des genres et espèces de ce groupe; par* J. E. PLANCHON, *docteur-ès-sciences.*

(*Continued from Vol. VI. page* 656.)

Gen. III. GOMPHIA, Schreb. DC. A. St. Hil. Endl. Gen. pl. n. 5958.

LES caractères de ce genre aussi bien connus que ceux des *Ochna*, n'ont pas besoin d'être répétés. De Candolle avait déjà observé que les espèces de Madagascar ont leurs stipules intra-axillaires et soudées; la même structure caractérise toutes les espèces de l'Inde et de l'Afrique tropicale, tandis que les *Gomphia* d'Amérique ont leurs stipules latérales et libres. Je pense qu'une telle différence, coincidant avec la distribution géographique, autorise la formation de deux sections très naturelles, l'une pour toutes les espèces de l'ancien monde, et l'autre pour celles du nouveau. Cependant, il faudrait se garder d'établir des genres sur les modifications d'un organe unique; puisque les espèces de *Melianthus* offrent de la manière la plus frappante des différences correspondantes, sans qu'on ait jamais songé à en faire des genres distincts.

Sect. I. *Gomphiastrum.*

Stipulæ intra-axillares in unam plus minus profunde fissam concretæ. Species Gerontogeæ.

Sp. 1. Gomphia *Sumatrana,* W. Jack, in Mal. misc. et in Hook. bot. misc. 2, p. 77; Planch. in Hook. icon. pl. tab. 712.

Euthemis elegantissima? *Wall. in Roxb. fl. Ind. (ed. 2,) p.* 305.

Hab. In Insula *Sumatra, W. Jack,* (herb. Hook.) in *Singapore* et insulis adjacentibus, *Wall.* (si stirps Wallichiana huc rite referta).

2. G. *glaberrima,* Pal. Beauv. fl. d'Ow. et Ben. 2, p. 22, tab. 71.

Hab. In regno *Oware, Pal. Beauv.* et ad *Sierra Leone, herb. Hook.*

3. G. *reticulata,* Pal. Beauv. l. c. tab. 72.

Hab. Cum præcedente, herb. Hook.

4. G. *Turneræ,* J. D. Hook. Fl. Nig. ined.

Hab. In *Sierra Leone—Dom. Turner,* in herb. Hook.

5. G. *multiflora,* DC. in Ann. du Mus. vol. 17, tab. 3.

Hab. In insula *Madagascar.*

6. G. *Vogelii,* J. D. Hook. MSS.

Hab. In ora Africæ tropicæ occidentalis, ad locum dictum *Grand Bassa, Vogel* in herb. Hook.

7. G. *macrocarpa,* J. D. Hook. MSS.

Hab. In ora Africæ tropicæ occidentalis, *Vogel,* in herb. Hook.

8. G. *calophylla,* J. D. Hook. MSS.

Hab. Ad *Sierra Leone, Don,* in herb. Hook.

9. G. *affinis,* J. D. Hooker, MSS.

Hab. Cum præcedente, herb. Hook.

Obs. Les espèces nouvelles de l'Afrique occidentale que j'indique simplement pour la localité, seront décrites par le Docteur J. D. Hooker, dans l'ouvrage qu'il prépare sur la botanique de l'infortunée expédition du Niger.

10. G. *dependens,* DC. in Ann. du Mus. 17, tab. 17.

Hab. In insul. *Madagascar,—du Petit Thouars* ex DC.

11. G. *angulata*, DC. l. c. tab. 18.

Hab. Cum præcedente.—*du Petit Thouars* ex DC.

12. G. *obtusifolia*, DC. l. c. tab. 19.

G. lævigata, *Vahl, symb. 2, p.* 49.

Hab. Cum præcedente.

13. G. *angustifolia*, Vahl, symb. 2, p. 49.

G. Zeylanica et G. Malabarica, DC. (suadent. Cl. Wight et Arn. et ex speciminibus plurimis e Ceylona et Ind. Or.)

Hab. In penins. Ind. Or., *Wight*; in Ceylona, *Col. Walker* —*Gardn.* in herb. Hook.; in provincia *Balangas,* insulæ Luzoniæ Philippinarum, *Cuming.* n. 1520, in herb. Hook.

14. G.? *Hookeri*, nov. sp.

G.? glaberrima; foliis oblongis, apice acuminatis, v. interdum obtusatis, in petiolum abrupte angustatis, integerrimis, coriaceis, nitidis, nervis secundariis veniformibus tenuissimis, arcuato-ascendentibus, inferioribus folii margini et sibi subparallelis; pedicellis ad apices ramulorum basi conglobato-fasciculatis; articulis (pedicellorum) inferioribus persistentibus, brevissimis, superioribus vix 1-poll. longis; calycibus sub gynobasi semiglobosa reflexis, rubentibus.

Ramus unicus adest, huic inde ramulos breves parce foliatos subdistiche exserens. Folia 2½-3 poll. longa, 1½ poll. lata; petiolus sæpe subtortus, crassus, 2-3 lin. longus, limbi decurrentia anguste marginatus; glomeruli florum ramulos terminántes, folio supremo proximi, verosimiliter 15-20 flori, in specimine deflorato pedicellum unicum fructiferum et bases aliorum induratas in nodulum conglobatas, exhibente.

Hab. In insula *Penang,* prope penins. Malaccensem, *herb. Hook.*

Obs. Comme je n'ai pas vu la fleur de cette plante, et que son gynophore n'offre plus de traces distinctes de l'insertion des étamines, je n'ose assurer que ce soit un vrai *Gomphia.* Cependant ses feuilles qui paraissent persistantes rappellent plutôt les Gomphia que les Ochna, et c'est seulement entre ces deux genres que l'analogie permet de hasarder un choix.

Sect. 2. *Eugomphia.*

Stipulæ laterales, liberæ. Species Americanæ.

Sp. 15. G. *laurifolia*, Sw. fl. Ind. occid. 2, p. 741, non DC.

G. foliis oblongis, integerrimis, nitidis, adultis facie superiore virentibus, nervis tenuibus albidis supra prominulis; paniculæ terminalis brevis contractæ multifloræ pedicellis fasciculato-congestis, longis; floribus parvis, antheris apice truncatis, subsessilibus, inclusis.

Hab. In sylvis Jamaicæ interioris, *Sw.*—*Purdie* in *herb. Hook.*

16. G. *Candollei*, Pl.

G. foliis oblongis, cuspidatis, integris v. subtilissime denticulatis, exsiccatione fuscescentibus, supra subaveniis; paniculæ terminalis ramis patentibus; pedicellis 2-3-natis, flore vix duplo longioribus; antheris (ex icone) sessilibus, apice attenuatis.

G. nitida, DC. *in Ann. du Mus.* 17, *p.* 419, *tab.* 24, *non Sw.*

Hab. In Cayenna, *Martin*, in herb. Hook.

Si de Candolle avait eu, comme moi, l'avantage de comparer cette dernière espèce avec des échantillons de la plante de Jamaïque que Swartz a décrite sous le nom de G. *laurifolia*, il aurait saisi entre les deux les différences que j'ai tâché de mettre en relief. Je ne puis avoir un doute sur la détermination de ces deux plantes; celle de Jamaïque s'accordant en tous points avec la description détaillée de Swartz, et celle de Cayenne avec la figure que De Candolle en a donnée. D'ailleurs, les échantillons que De Candolle a décrits et représentés, venaient probablement de la même source que ceux de l'herbier de Sir W. Hooker.

17. G. *grandifolia*, nov. sp.

G. glaberrima; foliis magnis, anguste oblongis, abrupte acuminatis, basi complicata rotundatis, margine tenui adpresse revoluto subtiliter serrulatis, nitidis, chartaceis, nervo medio complanato, lato, secundariis crebris venulisque tenuissimis; petiolo crasso; stipulis deciduis; paniculæ terminalis abbreviatæ confertifloræ ramis divaricatis; floribus parvis; petalis angustis calyce vix longioribus; antheris sublævibus, abbreviatis; baccis oblongis, gynobasi obovoidea longioribus.

Frutex verosimiliter sylvicolus. Rami crassi, subflexuosi; folia regulariter distiche patentia, 8-10 poll. longa, 2½ poll. lata; petiolus 2-3 lin. longus, subtus in basim costæ mediæ tumens, supra sulcatus. Stipulæ folii supremi breves, semi-ovatæ, apiculatæ; panicula contracta, subsessilis, foliis dimidio brevior; bracteæ subulatæ, breves, persistentes; baccæ olivæformes, nigræ.

HAB. Prope *Rio de Janeiro*, ad locum dictum *Imbuhy*, leg. Cl. *J. Miers*.*

Cette espèce, remarquable par la grandeur et le luisant de ses feuilles paraît avoir des rapports avec le G. *suaveolens*, A. St. Hil. et le G. *multiflora*, Pohl. Elle se distingue de la première par la nervure moyenne des feuilles plutôt imprimée que saillante; par leurs bords minces, dont une partie très étroite est repliée et comme doublée en dessous. Ce dernier caractère empêchera de la confondre avec le G. *multiflora*, où l'état contraire (folia plana) est expressément décrit et figuré, et qui d'ailleurs a des pétioles moins épais et une panicule pyramidale beaucoup plus grande que chez notre espèce.

18. G. *suaveolens*, A. St. Hil. fl. Bras. merid. 1, p. 63.

HAB. prope vicum *Tapanhocanga*, in montibus dictis *Serra do Caminho da Tapeira*, Cl. A. St. Hil.

19. G. *Pohlii*.

G. multiflora, *Pohl, pl. Br.* 2, *tab.* 183, *non DC.*

HAB. Inter frutices ad *Rio* S. *Joao*, capitaniæ Rio de Janeiro, *Pohl*, l. c.

20. G. *Miersii*, nov. sp.

G. glaberrima; foliis lanceolatis, utrinque acuminatis, apicem versus obsolete serrulatis, cæterum integerrimis, tenuibus, rigidulis, utrinque pulchre elevato-venulosis; stipulis brac-

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* Je suis heureux de remercier ici M. Miers pour l'obligeance qu'il a eue en me communiquant sa belle collection d'Ochnacées Brésiliennes, où se trouvent trois espèces nouvelles, quoique recueillies aux portes de Rio de Janeiro.

teisque e basi lata cuspidatis, acutissimis, persistentibus; racemis terminalibus, solitariis v. rarius geminatis, brevibus; pedicellis gracilibus patentibus; floris majusculi petalis angustis, antheris lævibus calyce subæqualibus.

Frutex ramosus, pulcher, calophyllus, verosimiliter sylvicolus. Folia majora 2½ poll. longa, 1½ poll. lata; petiolus brevis, incrassatus, rubescens; nervus primarius utrinque prominulus, secundarii arcuato-ascendentes, sæpius crebriusculi, interdum pauciores; venulæ crebræ hinc inde pinnato-ramulosæ; stipulæ versus apicem ramulorum confertæ, scariosæ, fuscæ, striatæ-apice acutissimo recurvæ, petiolo 3-4 plo longiores; spica simplex, vix 2-pollicaris; bracteæ subulatæ patentes, vix 1½ lin. longæ; pedicelli bracteis 5-plo longiores, supra basim 2-bracteolati; gynobasis fructifera cylindraceo-pyriformis, recta, vix 5 lin. longa; baccæ 2-3, olivæformes, gynobasi crassiores.

Hab. secus sinum Sebastianopolitanum, loco dicto *Jurijuba*, Cl. *J. Miers.*

L'affinité la plus étroite paraît exister entre cette belle espèce et le G. *cuspidata*, A. St. Hil. Cependant ses stipules et ses bractées persistantes, ses pétales étroits et non obovales, et ses anthères non rugueuses serviront à la distinguer de cette dernière. D'ailleurs, le G. *cuspidata* se rapproche du G. *olivæformis* et des ses analogues; tandis que les anthères lisses et les stipules persistantes rattachent plus naturellement le G. *Miersiana* à l'espèce suivante, qui la représente en miniature.

21. G. *stipulacea*, Velloz. Fl. Flum. 5, tab. 91, (sub G. *stipulata*.)

G. foliis parvis, anguste lanceolatis, utrinque attenuatis, apice inæqualiter exciso-tridentatis, cæterum integerrimis, amæne virentibus, glaberrimis, nitidis, pulchre venulosis; stipulis subulatis, longis, persistentibus; racemo terminali brevi, paucifloro; floribus parvis; petalis angustis, calyce longioribus; antheris lævibus.

Var. β. pentandra! (saltem ex flore unico cæterum perfectissime evoluto.)

Frutex verosimiliter humilis, delicatulus: rami graciles, subflexuosi, hinc inde disticbe ramulosi, breve pubentes; folia confertiuscula, disticbe patentia, pollicem et ultra longa; petiolus brevis, latus, complicato-subtortus; nervus medius utrinque prominulus, laterales utrinque 2-3, vage ascendentes, sæpius margini folii subparalleli; nervuli crebri striæformes, patentes, e nervo primario ad marginem folii extensi; stipulæ subulatæ, fuscæ, striatæ; 6 lin. longæ, basi dilatata ramulum semi-amplectentes, inter se et a petiolo distinctæ, in axillis foliorum non raro fasciculatæ.

In Brasilia, ad montem *Corcovado*, prope *Rio de Janeiro*, *J. Miers*. Var. β; prope *Boa Vista*, prov. *Rio de Janeiro*; —*Gardner*, n. 5692.

Cette jolie plante rappelle par son port, sa végétation, et ses stipules scarieuses, certaines espèces de *Lavradia* ou de *Sauvagesia*, et me paraît confirmer de la manière la plus frappante, l'affinité des Ochnacées (renfermant les *Luxemburgia*) avec les Sauvagesiées; rapport que M. Aug. de St. Hilaire a si bien fait ressortir au sujet des Luxemburgia pris isolément. L'échantillon de Mr. Gardner que j'ai vu en premier lieu, ne possède qu'une fleur ouverte, et cette fleur est certainement pentandre! J'aurais hésité à établir un genre sur ce caractère, quand même les échantillons plus complets de M. Miers ne m'eussent présenté, comme la figure du *Flora Fluminensis*, dix étamines parfaites. J'ai cru pouvoir me permettre une légère modification du nom spécifique, qui sans cela, donnerait comme particulier à une espèce, un caractère commun à toutes celles du genre.

22. G. *pulchella*, nov. sp.

G. glaberrima; foliis lanceolatis, acuminatis, basi acutis, integris v. apicem versus obsolete serrulatis; stipulis sero deciduis; paniculæ terminalis parvæ ramis paucis pedicellisque basi minute bracteatis, gracillimis; floribus parvis; petalis oblongo-obovatis, calyci subæqualibus; gynobasi fructifera pyriformi-clavata, incurva; baccis (immaturis) paucis pisiformibus, gynobasi multo brevioribus.

Frutex pulchellus, forsan subscandens; ramuli graciles,

flexuosi. Folia textura tenui sed rigidula, 1½ poll. longa; nervi tenues, supra prominuli; petiolus brevissimus; stipulæ e basi latiuscula subulatæ, petiolo triplo longiores: paniculæ rami graciles subflexuoso divisi; pedicelli alabastro 3-plo et ultra longiores: antheræ læves.

Hab. in insula Stæ. Catherinæ, Brasiliæ meridionalis subtropicæ, *Tweedie* in herb. Hook.

Entre la description de cette espèce et celle que M. Aug. de St. Hilaire a donné du G. *parviflora*, DC. il est difficile de saisir des différences bien marquées. Cependant la figure que de Candolle a donnée de sa plante me paraît assez différer dans son ensemble des échantillons que j'ai décrits, pour me faire craindre de déterminer à faux une espèce d'autant plus intéressante qu'elle paraît être la plus méridionale de tout le genre. Le fruit du G. *parviflora*, lorsqu'il sera connu, pourra seul lever les doutes à cet égard. En attendant, le G. *pulchella* se distinguera de toutes les espèces décrites par la forme singulière de son gynophore, dont la partie inférieure cylindrique très sensiblement courbée se renfle en une tête arrondie qui supporte un ou deux carpelles sphériques.

23. G. *Sellowii*, nov. sp.

G. parviflora, *herb. Berol. in herb. Hook. non DC.*

G. ramosissima, glaberrima; foliis parvis, confertis, breve petiolatis, oblongis, basi obtusa leviter complicatis, apicem versus remote parceque serrulatis, cæterum integris, coriaceis, nitidis; nervis secundariis tenuibus, vix conspicuis; venulis obsoletis; paniculæ terminalis parvæ ramulis divaricatis; pedicellis sub anthesi ebracteatis alabastro vix 2-plo longioribus; petalis obovatis, obtusissimis calyce subæqualibus; antheris lævibus, dorso latis.

Frutex habitu rigidiore quam sp. præcedens: ramuli crebri, abbreviati, recti; folia conferta, nitidula, primo intuitu integerrima, 1½ poll. longa, 8-10 lin. lata; petiolus brevissimus: bracteæ in ramis floriferis nullæ, antea non visæ; pedicelli quam illi præcedentes minus graciles, apice paulo incrassati. Fructus ignotus.

Hab. in Brasilia (verosimiliter tropica) cl. *Sellow.* in herb. Hook.

Je n'hésite pas à considérer cette espèce comme distincte du G. *parviflora*, DC., parce que ses feuilles, au lieu d'être attenuées, aiguës et planes à la base, sont au contraire obtuses et très sensiblement *compliquées.* D'ailleurs, elles ne sont pas entières comme elles paraissent au premier abord, et les petites dents qu'elles offrent vers leur sommet n'auraient pas échappé à M. Aug. de St. Hilaire, si elles existaient également dans les échantillons authentiques de G. *parviflora*, qu'il a eu l'avantage d'examiner.

24. G. *parviflora*, DC. in ann. du mus. vol. 17, p. 420, tab. 16.

Ochna Jabotapita, *Fl. Flum. vol.* 5, *tab.* 90, *non Plum.*

Hab. in Brasilia, *DC.*; eam in sylvis primævis prope fluvium *Rio preto*, provinciæ *Minas Geraes*, ad fines provinciæ *Rio de Janeiro*, leg. cl. A. St. Hil.

25. G. *Caraccasana*, nov. sp.

G. glaberrima; foliis magnis, petiolatis, oblongis, obtuse v. acutiuscule acuminatis, integerrimis, v. sæpius hinc inde repando-serratis, tenuiter chartaceis, concoloribus, nitidis, nervo medio supra latiusculo, plano, subtus acute prominente; secundariis tenuibus, arcuato-ascendentibus, utrinque prominulis; panicula terminali, multiflora, ebracteata; pedicellis flore longioribus; petalis angustis, calyce demum reflexo (persistente?) vix longioribus; antheris sublævibus.

Arbor? calophylla; rami teretes; ramuli axisque inflorescentiæ compressi, fusci; folia majora 4 poll. longa, subdimidio lata; nervi venulis tenuissimis pulchre intertexti; petiolus 2 lin. longus, supra sulcatus, rubescens; flores parvi; antheræ læves.

Hab. prope *Caraccas—Linden*, coll. n. 4. in herb. Hook.

J'oserais à peine décrire cette belle espèce comme différente du G. *Guyanensis*, au moins de la plante que de Candolle a figuré sous ce nom, si je n'avais sous les yeux des échantillons recueillis à Cayenne par M. Martin qui me paraissent se rapporter à cette dernière espèce, et sont certainement distincts de la plante de Caraccas. Dans la première les feuilles à-peu-près lisses à leur face supérieure, ont l'inférieure relevée d'un beau réseau de nervures et de veines. Elles sont surtout très remarquables par la couleur châtain très foncé qu'elles prennent par dessication : celles du G. *Caraccasana* ne changent pas sensiblement leur couleur verte ; d'ailleurs, les fleurs de cette dernière sont plus petites que celles dont les échantillons de Cayenne offrent des fragmens trop imparfaits pour être décrits.

26. G. *Guyanensis,* DC. in ann. du mus. vol. 17, tab. 9 ; an Ouratea Guyanensis ? Aubl. Guy. I, p. 397, tab. 152 ?

HAB. In Guyana Gallica, *Aubl.* ad *Rio Negro, DC.*

Aublet décrit cette espèce comme un bel arbre des forêts, dont le tronc atteint jusqu'à la hauteur de 60 pieds. Si l'on songe que plusieurs *Gomphia* des *Campos* offrent des tiges simples et grèles, d'un pied de haut, on aura dans le contraste un exemple frappant de l'influence des stations sur la végétation des espèces du même genre.

27. G. *lucens,* H B. K. nov. gen. et sp. vol. 7, p. 192, (ed. folio).

HAB. in littore Novo Granatensi, juxta *El Zapote* ad ostia fluminis *Sinu,* prope Carthagenam, et ad *Turbaco,* alt. 180 hexap. H. et B.

28. G. *salicifolia,* Aug. St. Hil. et Tulasne in Ann. des sc. nat. ser. 2, vol. 17, p. 137.

HAB. prope *Rio de Janeiro, Ildef. Gomez,* ex A. St. Hil. et Tul.

29. G. *curvata,* A. St. Hil. fl. Bras. mer. 1, p. 68.

HAB. in sylvis prope viculum *Carahype,* prov. *Spiritus Sancti,* haud longe a littore maris ; A. S. H.

30. G. *cuspidata,* A. St. Hil. l. c. p. 67.

G. serratula, *Pohl. pl. Bras.* 1, *p.* 119, *tab.* 181, *fide, A. St. Hil. et Tul.*

HAB. in sylvis primævis ad littora fluminis *Parahyba,* prope villam *Uba,* prov. *Rio de Janeiro,* alt. circit. 600 ped., cl. A. St. Hil.

31. G. *æmula,* Pohl, pl. Bras. 2, p. 180, tab. 182.

Hab. in Brasiliæ, provincia *Rio de Janeiro. Pohl.*

Obs. Cette espèce n'est peut-être pas assez distincte de la précédente, ainsi que l'ont soupçonné MM. Aug. de St. Hil. et Tulasne. Je regrette de n'avoir vu d'échantillon authentique que du seul G. *serratula.*

32. G. *olivæformis,* A. St. Hil. fl. Bras. merid. 1, p. 67.

Hab. in sylvis prope *Rio de Janeiro, A. St. Hil. Miers, Gardn.* in herb. Hook.

33. G. *Jamaicensis,* nov. sp.

G. glaberrima; foliis oblongis, intrinque acutis, cuspidatis, integris v. remote et obtuse denticulatis, supra livide virentibus, subtus fuscis, coriaceis, nitidis; nervis lateralibus, curvis, utrinque vix prominulis; paniculæ terminalis ramis divergentibus; floribus majusculis; antheris sublævibus.

Species pulchra, habitu G. *olivæformis;* foliis 3-4 poll. longa, 1½ poll. lata, patentia, subdeflexa; pedicelli et calyces inaperti siccitate nigrescentes; petala late cuneato-obovata, calyce majora.

Hab. in Jamaica, *Mac Fadyen* in herb. Hook.

34. G. *Jabotapita,* Sw. fl. Ind. Occid. 2, p. 740; DC. in ann. du mus. 17, p. 418, (exclus. syn. Marcgr.)

Hab. in insulis Antillanis? *Plum.*

35. G. *squamosa,* DC. l. c. tab. 12.

Hab. in insula *Tobago*? DC.

Obs. A en juger d'après des figures, cette espèce paraît extrêmement voisine de la suivante.

36. G. *Mexicana,* H. B. pl. equin. 2, tab. 74.

Hab. in calidis inter *Acapulco* et *Chilpancingo,* regni Mexicani, *Humb. et Bonp.*

37. G. *Jurgensenii,* nov. sp.

G. glaberrima; foliis anguste lanceolatis, longe acuminatis, acutissimis, basi excepta argute serratis, tenuibus, rigidis, fragilibus, nitidis, pulchre arcuato-nervosis; paniculæ terminalis brevis laxiusculæ depauperatæ ramis patentibus, bracteatis; pedicellis gracilibus, longiusculis; antheris sessilibus, tenuiter rugulosis.

Sp. elegans: epidermis ramulorum grisea, sublævis, nitida: folia 3½-4 poll. longa, vix 1 poll. lata, exquisite acuminata; petiolus 2-3 lin. longus; stipulæ valde deciduæ non visæ; panicula foliis brevior; flores in specimine manco semi-destructi.

Hab. in regni Mexicani montibus, dictis *Sierra San Pedro Nolasco, Jurgens*, coll. n. 779.

Cette espèce, la seconde qui soit décrite du Mexique se reconnaîtra sans peine à ses feuilles étroites, très longuement acuminées, à réticulation délicate; elle est très distincte du G. *Mexicana*.

38. G. *nitida*, Sw. fl. Ind. occid. 2, p. 739; DC. in ann. du mus. 17, tab. 13???

Hab. in *Jamaica, Sw.*; in insul. *S. Thomasii, DC.*; in insula *Antigua? Dr. Nicholson*, in herb. Hook.

39. G. *Guildingi*, nov. sp.

G. foliis breve petiolatis, patenti-subdeflexis, elliptico-oblongis, utrinque acutiusculis, basi excepta tenuiter serrulatis, glaberrimis, rigidis, coriaceis, discoloribus; nervis secundariis crebris, tenuibus, prominulis; paniculis e ramis denudatis ortis, brevibus; pedicellis alabastro longioribus, calycibusque minute resinoso-puberulis; antheris supra medium rostratis, transverse rugulosis, poris apicalibus minutis.

Frutex v. arbor: ramuli crebri, angulo recto-patentes; folia 1½-2 poll. longa, dimidio lata, dura, supra olivaceo-fusca, lucida, subtus pallidiora, opaca; pubes inflorescentiæ et calycum pulveracea, granulis minutissimis, vitreis conspersa.

Hab. in insula S. Vincentii, *Rev. L. Guilding*, in herb. Hook.

Cette espèce me paraît bien distincte de la plante que De Candolle a figurée sous le nom de G. *nitida*, (Mem. cit. tab. 13), et qui n'est probablement pas la même que celle de Swartz. Les différences spécifiques sont, dans ce genre, si difficiles à rendre par des mots, qu'il est souvent impossible d'arriver à des déterminations sûres d'après de simples descriptions. Aussi n'ai-je rapporté qu'avec doute au G. *nitida* les échantillons de l'Ile d'Antigue déjà mentionnés. Voici les différences qui s'observent entre ces derniers et l'espèce ici décrite. Leurs anthères, à peine rugueuses, n'offrent pas de retrécissement brusque et s'ouvrent par des pores assez larges ; leurs calices sont à-peu-près glabres : les anthères du G. *Guildingi* sont, au contraire, très sensiblement rugueuses et brusquement retrécies en bec ; ses calices sont couverts d'une couche pulvérulente, où la loupe fait voir des petits granules crystallins. Les feuilles et l'inflorescence sont les mêmes chez les deux plantes. C'est à ceux qui possèdent beaucoup de plantes des diverses îles des Antilles, et qui pourront les comparer avec des types originaux, à décider s'il n'existe pas plusieurs espèces confondues sous le nom de G. *nitida.*

40. G. *Surinamensis*, nov. sp.

G. glaberrima ; foliis petiolatis, oblongis, acutiusculis, acuminatis, supra basim serrulatis, coriaceis, nitidis, subconcoloribus, planis ; nervo medio latiusculo secundariisque arcuatis utrinque impressis ; paniculæ terminalis depauperatæ ramis paucis racemiformibus, laxifloris ; pedicellis gracilibus, alabastris duplo longioribus ; calycibus post anthesim reflexis (an persistentibus ?) ; antheris undulato-rugulosis.

Frutex v. arbor ? ramuli stricti, læves, teretes, fusci ; stipulæ foliorum juniorum subulatæ, petiolum 2 lin. longum supra sulcatum æquantes. Folia 2-3 poll. longa, 1-2 poll. lata.

Hab. in *Guyana* Batavica, prope *Surinam*, *Dr. Hostmann*, in herb. Hook.

Obs. On distinguera sans peine cette espèce du G. *nitida*, par ses nervures imprimées à la face supérieure des feuilles, et par ses anthères qui ne sont pas simplement rugueuses, mais comme chiffonnées par des plis transversaux. Je pourrais la croire identique avec le G. *cardiosperma*, DC., dont on ne connaît que les fruits, tandis qu'ils manquent dans les échantillons de mon espèce. Cependant, les ovaires

même un peu grossis ne m'offrent encore dans leurs lobes aucune tendance vers cette forme remarquable, qui caractérise les carpelles murs du G. *cardiosperma.*

41. G. *acuminata*, DC. in Ann. du mus. 17, tab. 14.

HAB. in Brasilia, *DC.* l. c.

42. G. *subscandens*, nov. sp.

G. glaberrima; foliis patentibus v. subdeflexis, oblongis, acuminatis, ab apice infra medium obsolete et obtuse serratis, coriaceis, subaveniis, nervo medio supra lato impresso, subtus acute prominulo, secundariis tenuibus, crebris, arcuatis, utrinque impressis; paniculæ terminalis, magnæ, ramis elongatis, incurvo-patentibus, multifloris, ebracteatis; floribus mediocribus, confertis, pedicello subæquilongis; petalis cuneato-obovatis, calyce parum longioribus; antheris sessilibus transverse rugulosis.

Frutex subscandens, *Gardn.*; rami teretes, griseo-fusci, lenticellis punctiformibus adspersi; folia majora 3½-4 poll. longa, 1½-2 lata; serraturæ versus folii apicem remotæ, obtusissimæ, interdum obsoletæ; substantia folii tenax nec fragilis; petiolus 2 lin. longus, supra canaliculatus, marginibus involutis, rubro-nigrescens: paniculæ subpedalis rami inferiores longi superioresque gradatim abbreviati, compresso-angulati; baccæ 1-2 subelliptico-obovatæ, lateribus compressæ, gynobasi globosæ iisdem crassiore insidentes.

HAB. in sylvis prope *Pernambuco*, frequens—*Gardn.* n. 956, in herb. Hook.

43. G. *hexasperma*, A. St. Hil. pl. us. Bras. n. 38, cum icon.

HAB. in campis arboribus tortuosis intersitis haud infrequens, præsertim in partibus prov. *Minas Geraes*, quæ dicuntur *Minas novas et Certáo do Rio de S. Francisco, A. St. Hil.* provincia *Piauhy, Gardn.* in herb. Hook. n. 2511.

44. G. *persistens*, A. St. Hil. fl. Bras. merid. 1, p. 56, (ann. 1825.)

HAB. In montibus dictis *Serra da Caraça*, prov. *Minas Geraes*, A. St. Hil.

44 *bis*. G. *semiserrata*, Mart. et Nees, in nov. act. acad. nat. cur. vol. 12, p. 42, (ann. 1824.)

Hab. in prov. *Minas Geraes*, prope *Tamburil* et *Valos*—*Mart.*

Obs. C'est à dessein que je donne à cette espèce le même numéro d'ordre qu'à la précédente. Je présume en effet qu'il faudra les réunir, lorsqu'une suite nombreuse d'échantillons permettra de saisir le passage de l'une à l'autre. La collection de Sir W. Hooker renferme un échantillon envoyé de l'herbier de Berlin, sous le nom de G. *semiserrata*, auquel M. Klotzsch joint comme synonyme celui de *persistens*. Si d'un côté je n'ai pas un doute que cette plante est le vrai G. *semiserrata*, je trouve d'autre part entr'elle et ce que je crois être le G. *persistens* des différences que je vais signaler, en langage technique, sans être moi-même persuadé de leur constance ou de leur valeur spécifique.

G. *persistens*, ex speciminibus in prov. *Minas Geraes*, a Cl. *Langsdorff*, et a cl. *Clausenio* lectis; folia oblonga, crassa, 3-4 poll. longa, supra basim obtusiuscule serrata, nervo medio rubente, lateralibus subtus nullis; rami floriferi crassi apice lapsu perularum profunde annulati.

G. *semiserrata*, Mart. et Nees, ex specim. herb. Berolin, a Cl. Klotzsch nominato;—partibus omnibus præcedente gracilior: folia vix 2 poll. longa, minus crassa, ab apice infra medium argute serrata, nervo medio concolore, lateralibus nervulisque reticulatis utrinque tenuiter prominulis.

Inflorescentia et flores in utraque plane consimiles.

45. G. *castaneæfolia*, DC. l. c. tab. 11.

Hab. Frequens in campis prov. *Minas novas* et in parte occidentali prov. *Minas Geraes* quæ dicitur *Certáo*; nec non ad ripas fluminis dicti *Rio Verissimo*, A. St. Hil. *Minas Geraes*, *Claussen*. *Piauhy*; *Gardner*, n. 2510, in herb. Hook.

46. G. *ilicifolia*, DC. l. c. tab. 418.

Hab. In insula *S. Domingo*, DC.

47 G. *longifolia*, DC. l. c. tab. 10.

HAB. In *Guadalupa*, DC.

48. G. *floribunda*, A. St. Hil. fl. Bras. merid. 1, p. 64.

HAB. In campis altis (vulgo *Chapadas*) partium prov. *Minas Geraes* quæ dicuntur *Minas novas* et *Distrito dos Diamantes*, præsertim prope pagos *Milhoverde, Rio Manso* et *S. Joào*, A. St. Hil.; in montibus dictis *Serro do Frio, Gardn.* Bras. n. 4489, in herb. Hook.

49. G. *Claussenii*, nov. sp.

G. glaberrima; foliis confertis, erecto-imbricatis, subsessilibus oblongis, utrinque acutis, argute serratis, coriaceis, nitidis; nervis tenuibus parallele arcuatis utrinque prominulis; paniculæ terminalis ramis strictis, elongatis, racemiformibus; pedicellis alabastro ovato acuto subæqualibus; antheris sessilibus, undulato-rugosis.

Ramus unicus adest simplex, rigidus, foliis erectis tectus, cortice non suberoso, sub epidermide cinerascente partim detersa, fulvo. Folia fere *Castaneæ* sed minora, 2-3 poll. longa, 10-15 lin. lata, faciebus subconcoloria nervus primarius latiusculus, utrinque prominulus; secundarii crebri, versus marginem folii inter se vix connexi, venis tenuibus intertexti; paniculæ vix semipedalis rami angulati, ebracteati, subglaucescentes; sepala-ovato lanceolata, 2½-3 lin. longa, obtusiuscula, interiora margine late scariosa; petala calyce paulo longiora.

HAB. In prov. *Minas Geraes*; *Claussen*, in herb. Hook.

OBS. Les dents assez profondes des feuilles et le défaut de bractées et de stipules sur les branches fleuries feront distinguer cette espèce de la précédente. Ses feuilles presque sessiles et dressées lui donnent un aspect très différent de celui du G. *castaneæfolia*, DC.

50. G. *confertiflora*, Pohl, pl. Bras. 2, p. 117, tab. 179.

G. lanceolata, *Pohl, l. c. tab.* 178?

HAB. in campis provinciæ *Goyaz, Pohl*; prope *San Domingos, Gardn.* herb. Bras. n. 4107; prope *Natividade, Gardn.* n. 3081, in herb. Hook.

Obs. Je croirais que cette espèce est la même que le G. *humilis*, A. St. Hil. si les nervures de celle-ci n'étaient décrites comme très peu saillantes, tandis qu'elles le sont d'une manière assez remarquable sur les échantillons que je rapporte à l'espèce de M. Pohl.

51. G. *humilis*, A. St. Hil. fl. Bras. mer. 1, p. 66.

Hab. In Brasiliæ campis herbidis arboribus tortuosis intersitis haud infrequens, præsertim prope urbem *Paracatu*, prov. *Minas Geraes*, et in parte australi provinciæ *Goyaz*, A. St. Hil.

52. G. *nana*, A. St. Hil. l. c. p. 66, tab. 12.

Hab. In campis herbidis prope pagum *Farinha Podre*, in parte occidentali prov. *Minas Geraes*, haud procul a finibus provinciæ S. Pauli, A. St. Hil.

53. G. *pubescens*, A. St. Hil. et Tul. in ann. des sc. nat. sér. 2, vol. 17, p. 137.

Hab. In provincia *Minas Geraes*.

54. G. *subvelutina*, nov. sp.

G. tota adpresse lutescenti-velutina; foliis ellipticis, basi complicata in petiolum brevissimum angustatis, apice obtusis, margine integerrimo insigniter revolutis; nervis secundariis supra obsolete, subtus valde prominentibus reticulo nervulorum densissimo intertextis; racemis subsimplicibus, longiusculis, nunc axillaribus, sæpius in paniculam terminalem collectis; pedicellis flori subæqualibus; antheris rugosis calyce parum brevioribus.

Arbor humilis, *Gardn.* Rami crebri, patentes, novelli velutini; folia exacte elliptica, apice obtusiusculo mucronulata, coriacea, cinnamomeo-lutescentia: stipulæ (foliorum juniorum) lineari-subulatæ, acutissimæ, 2½ lin. longæ, caducæ; pedicelli teretes, 2½ lin. longi.

Fl. Aug.

Hab. In collibus siccis prope *Paranagoa*, provinc. *Piauhy*—*Gardn.* herb. Bras. n. 2513.

Obs. Cette espèce se rapproche par ses caractères des G. *nana* et *oleæfolia*, mais elle est très distincte de toutes deux.

55. G. *brachyandra*, nov. sp.

G. minutissime puberula; foliis brevissime petiolatis, ovatis, v. oblongo-ellipticis, obsolete serrulatis v. subintegris, coriaceis, viridi-lutescentibus; nervis secundariis arcuatis; paniculæ terminalis ramis nunc confertis, abbreviatis, nunc elongatis racemiformibus, pedicellis flore sublongioribus; calycibus pube cinnamomeo-castanea indutis; floribus parvis; antheris plane sessilibus, rugulosis, vix 2 lin. longis.

var. *α*. ovata.

Frutex 6-8 pedalis, foliis subsessilibus, ovatis, basi subcordatis; panicula conferta. Folia 1½-2 poll. longa, 15 lin. lata.

β. intermedia.

Frutex 2-4 pedalis, foliis ovato-lanceolatis, basi obtusis; panicula minus conferta.

γ. elliptica.

Frut. 6 ped., foliis oblongo-ellipticis, utrinque subacutiusculis; ramis paniculæ elongatis.

Hab. Var. *α*. in montibus dictis *Serra do Mato Grosso*, prov. *Pernambuco,—Gardn.* n. 2805; *β*. in collibus aridis arenosis districtus *Rio Preto*, prov. *Pernambuco,—Gardn.* n. 2807; *γ*. ad *Paranagoa*, et prope *Crato*, prov. *Piauhy—Gardn.* n. 2512 et 1515.

Au milieu des variations de forme de ses feuilles, cette espèce conserve constamment son écorce fendillée en long, la teinte mate que communique à son feuillage et à son inflorescence un duvet d'un vert-jaunâtre ou de couleur canelle, et ses fleurs, dont les anthères tout-à-fait sessiles persistent après la chûte du calice, assez long-temps pour qu'on remarque leur peu de longueur. On risque peut-être de la confondre avec le G. *pubescens*, A. St. Hil. et Tul.; mais celle-ci à laquelle je crois pouvoir rapporter le n. 4489 de la collection de M. Gardner, a des nervures beaucoup plus longues.

56. G. *oleæfolia*, A. St. Hil. pl. rem. Bras. et Par. 1, p. 24, tab. 9.

Hab. Frequens in dumetis Brasiliæ vulgo *Carrascos*, præsertim prope pagum *S. João*, in parte boreali provinciæ

Minas Geraes quæ dicitur *Mina-novas*, A. St. Hil. In provinc. *Goyaz*—*Gardn.* herb. Bras. n. 2310.

57. G. *ovalis*, Pohl, pl. Bras. 2, tab. 180.

HAB. In campis inter arbores humiles circa *Fazenda de Dona Severina*, in parte septentrionali capitaniæ *Goyaz*,—*Pohl*, *Gardn.* n. 3635.

Var. glabrata; in prov. Goyaz, *Gardn.* herb. Bras. n. 3082 et 4106.

OBS. Cette espèce est très facile à reconnaître à ses rameaux subéreux dont l'épiderme se détruit de bonne heure; à ses feuilles sessiles reticulées, et à ses calices presque toujours couverts d'une couche pulvérulente. Ses feuilles sont tantôt aiguës, tantôt obtuses; le plus souvent pubescentes, d'autres fois glabres comme dans les échantillons de M. Gardner.

58. G. *nervosa*, A. St. Hil. fl. Bras. mer. 1, p. 62.

HAB. In campis herbidis prope civitatem *Goyaz* s. *Villa Boa*, haud infrequens, *A. S. H.*

59. G. *glaucescens*, A. St. Hil. fl. Bras. merid. 1, p. 68, tab. 13.

HAB. In campis herbosis partis occidentalis provinc. *Minas Geraes*, quæ dicitur *Certâo do Rio de S. Francisco*, A. St. Hil. *Serra da Batalha*, *Rio Preto*, prov. *Pernambuco*,—*Gardn.* herb. Bras. n. 2809.

60. G. *rotundifolia*, Gardn. in Field. sert. tab. 34.

HAB. In sabulosis aridis circa Bahiam, *Saltzm.*, *Blanchet*, n. 1840.

61. G. *parvifolia*, A. St. Hil. fl. Bras. merid. 1, p. 65.

HAB. In campis herbidis partis occid. prov. *Minas Geraes* vulgo dictæ *Certâo do Rio de S. Francisco*, præcipue prope pagum *Curaçâo de Jesus*, A. St. Hil.

62. G. *Blanchetiana*, nov. sp.

G. ramulis axique inflorescentiæ pubescentibus; foliis parvis, ovalibus, basi obtusissimis v. subcordatis, apicem versus acutiusculum v. obtusatum sæpius paucidentatis, cæterum integris, planis; venulis utrinque impressis, subobsoletis; paniculis terminalibus brevibus; calycibus glaberrimis, petalis obovatis parum brevioribus; antheris transverse rugulosis.

Frutex verosimiliter dumosus, ramosissimus: rami glabri tortuosi, cinerei; ramuli pube brevissima rufidula induti; folia vix 1 poll. longa, 8-10 lin. lata; petiolus 1½ lin. longus, supra sulcatus, rubescens; nervus primarius supra prominulus, subtus impressus, subrubescens; paniculæ vix 2 poll. longæ, parum ramosæ; pedicelli 6 lin. longi, minutissime puberuli; flores expansi diamet. circit. 7-8 lin.

Obs. Cette espèce paraît être voisine du G. *parvifolia*, dont elle se distinguera sans peine par ses feuilles, qui n'offrent pas même une tendance à se rouler sur les bords, par ses pétioles plus longs, et ses calices tout-à-fait glabres.

63. G. *rufidula*, nov. sp.

G. ramosissima; ramulis inflorescentiaque minute velutino-puberulis; foliis parvis, ovato-oblongis, basi obtusis v. acutiusculis, supra medium ad apicem argute serratis, coriaceis, planis, subaveniis, siccitate rufidulis, nitidis; paniculis terminalibus, brevibus, parum ramosis; calycibus deciduis; baccis 3-4 (immaturis) ovoideis, gynobasi valde incrassatæ affixis.

Frutex habitu præcedentis, circiter 8-pedalis, rami crebri, tortuosi, cinerei; stipulæ e basi latiuscula cuspidatæ petiolo 1-1½ lin. longo, folio concolori subæquales; nervus primarius supra prominulus, subtus impressus; secundarii tenuissimi, arcuati, utrinque immersi, vix conspicui.

Hab. In collibus siccis dumetosis, prope *Paranagoa*, infrequens, *Gardn.* herb. Bras. n. 2509.

64. G. *vaccinioïdes*, A. St. Hil. et Tul. in ann. des sc. nat. ser. 2, vol. 17, p. 137.

Hab. In montibus Organensibus prope *Rio de Janeiro*, *Guillem.—Gardn.* n. 5691; crescit etiam in prov. S. Pauli ex A. St. Hil. et Tul.

65. G. *cassinæfolia*, DC. in ann. du mus. vol. 17, tab. 18.

Hab. In Brasilia, *DC.* in prov. Bahiensis *Serra Jacobina*, *Blanch.* n. 3140; *Pernambuco,—Gardn.* n. 2807?

Obs. Si, comme je le crois, le n. 2807 de la collection de M. Gardner se rapporte à cette espèce, ses feuilles peuvent être acuminées et aiguës, au lieu d'être très obtuses comme

dans les échantillons de M. Blanchet, et ceux qu'a figurés De Candolle. Leur nervure moyenne est toujours rougeâtre.

66. G. *aquatica*, H. B. K. nov. gen. et sp. 6, p. 14.

HAB. Ad Orinocum prope Javitam; H. B.

67. G. *Schomburgkii*, nov. sp.

G. glaberrima; foliis oblongis, acute cuspidatis, basi acuta in petiolum brevem attenuatis, argute serratis, coriaceis, minute reticulatis: racemo terminali, simplici, densifloro; floribus geminatis v. ternatis, majusculis; calycibus nigrescentibus, pedicellis subæqualibus.

Folia 3-4 poll. longa, 1-1½ poll. lata, exsiccatione fuscescentia, nervo medio utrinque prominulo, lateralibus vix manifestis, reticulo nervulorum denso utrinque parum conspicuo.

HAB. In Guyana Anglica, ad fluvium *Berbice*, leg. cl. *Schomb.* ann. 1837; in *Demerara,—Dr. Hancock,—Dr. Nicholson*, in herb. Hook.

OBS. Cette espèce est très voisine de la suivante, qui s'en distinguera surtout par ses feuilles très entières.

68. G. *grandiflora*, DC. l. c. tab. 17.

HAB. In Guyana ad *Rio Negro*, DC.

Sp. non satis nota.

69. G. *verticillata*, Fl. Flum. vol. 5, tab. 89, (sub Ochna).

HAB. In Brasilia.

OBS. Cette remarquable espèce, qui paraît très distincte de toutes celles que j'ai énumérées, doit probablement se placer près du G. *suaveolens* et du G. *Miersiana*, (sup. n. 17 et 18). J'ai décrit plus haut le G. *stipulacea* figuré sous le nom d'*Ochna stipulata* dans le *Flora Fluminensis*: l'*Ochna Jabotapita* du même ouvrage est évidemment le G. *parviflora*. Quant aux autres espèces du même ouvrage que je n'ai pu identifier avec les échantillons que j'ai sous les yeux, il est prudent d'attendre qu'elles aient reçu cette sanction, avant de les admettre dans un tableau comparatif de la distribution géographique du genre.

Après ces détails descriptifs dont les résultats peuvent seuls faire pardonner l'aridité, nous passons à considérer les *Ochnacées,* d'abord, comme groupe distribué sur divers points du globe, et puis, comme province circonscrite de cette carte d'affinités dont il est permis de rêver l'existence, quoique ses pôles et ses cercles restent encore à fixer.

Toutes les Ochnacées capsulaires ou Luxemburgiées appartiennent aux régions tropicales de l'Amérique du Sud. Les élégants *Luxemburgia* fournissent, suivant M. Aug. de St. Hilaire, un des traits caractéristiques de cette remarquable flore qui couronne les parties élevées de la province de *Minas Geraes,* et qui sépare la région des bois vierges de celle des pays découverts, sans établir un passage entre leurs végétations si différentes. La seule espèce de *Luxemburgia* qui sorte de cette région est le L. *ciliosa,* Mart., qui croît également dans la province des Mines et sur les montagnes des Orgues, dans le voisinage de *Rio de Janeiro.*

Le *Blastemanthus* (*Godoya gemmiflora,* Mart. et Zucc.) observé d'abord par M. Martius sur les rives du fleuve des Amazones, existe dans la collection de M. Schomburgk, très probablement du *Rio Negro.*

Le Pérou et la Nouvelle Grenade se partageraient en égales parts les *Cespedesia* et les *Godoya,* si l'on admettait comme genre distinct notre *Godoya* à feuilles pinnées. Tous sont de grands arbres qui font l'ornement des lieux où ils croissent et fournissent aux usages des habitants un bois précieux par sa dureté.

Isolé par ses caractères des Luxemburgiées dont il possède les traits extérieurs, l'*Euthemis* nous transporte au milieu de la végétation luxuriante de la Péninsule Malayenne et des îles adjacentes. Ses deux espèces sont, avec deux *Gomphia,* les seuls représentants de la famille des Ochnacées, dans cette riche région de la flore Asiatique.

L'ancien monde est la patrie exclusive des *Ochna.* Des dix-huit espèces connues, cinq habitent la pointe australe de l'Afrique, assez loin hors du tropique pour que deux d'entr'elles soient comprises dans les limites de la colonie du

Cap;* Madagascar en possède deux; l'Ile de France une seule; un autre croît à Sierra Leone; l'espèce du Sénégal existe, suivant MM. Guillemin et Perrottet, dans les collections de Palisot de Beauvois, probablement d'Oware et de Benin; celle que Forskäl observa dans l'Arabie heureuse ressemble beaucoup à l'O. *atropurpurea* du Cap; Ceylan a deux espèces qui lui sont propres; la Péninsule de l'Inde en a fourni cinq dans sa région chaude, tandis qu'au pied de la chaîne qui en forme la barrière septentrionale, l'*Ochna pumila*, par ses proportions naines, annonce l'action d'un climat moins chaud, et plus encore la tendance qu'ont toutes les plantes d'une région donnée vers une certaine uniformité de végétation, dont les causes complexes échappent à tout calcul partiel.

Un point de la végétation des *Ochna* qui mérite d'être rappelé, c'est que plusieurs espèces des pays chauds se dépouillent chaque année de leurs feuilles, et que les fleurs, soit qu'elles précèdent ou accompagnent les jeunes pousses, naissent toujours de bourgeons séparés. Beaucoup de végétaux des Tropiques présentent le même phénomène: c'est à ce dépouillement complet que certains bois du Brésil, les *Catingas*, doivent leur caractère particulier, et, comme les phases de végétation provoquées par des causes générales, influencent d'une manière presque uniforme les organismes les plus différents, il serait bien à désirer qu'on eut des données positives sur la proportion d'espèces et de genres que chaque ordre naturel fournit à ces associations. Plus précieuses encore, mais plus difficiles à obtenir seraient des observations comparatives sur la liaison qui existe entre les phases de la végétation et l'influence combinée du sol, du climat, des formes organiques, dans des contrées situées sous la même latitude, mais sous des méridiens différents.

Le genre *Gomphia*, qui, à raison du nombre de ses espèces, forme le noyau central de sa tribu, est commun aux parties chaudes des deux mondes. La seule espèce qui croisse hors des Tropiques, est le *Gomphia pulchella* de l'Ile Ste. Catherine; mais cet empiètement du genre hors de ses limites est plus apparent que réel; car les lignes qui définissent vaguement des végétations limitrophes sont loin de coïncider avec les divisions astronomiques de la sphère, et l'Ile de Ste. Catherine par exemple, quoique située entre les 27ème et 28ème degrés de latitude sud, trop près de la côte du Brésil pour avoir la végétation anomale des îles perdues loin des continents, possède une flore d'un caractère entièrement tropical.

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* C'est par inadvertance que *l'Ochna Delagoensis* à été indiqué ci-dessus (p. 655), comme croissant dans ces limites.

Le caractère des stipules intraaxillaires et soudées unit dans une section naturelle tous les *Gomphia* de l'ancien continent. Des quatorze espèces connues, sept habitent l'Afrique occidentale; quatre Madagascar; une espèce remarquable est propre à Sumatra; une autre (douteuse quant au genre) vient de l'Ile Pénang, sur la côte ouest de la Péninsule Malayenne; enfin, le *Gomphia angustifolia*, Vahl, qui n'est pas rare à Ceylon, et sur deux côtes de la Péninsule de l'Inde, se retrouve même dans les Iles Philippines. C'est un fait digne de remarque qu'aucune espèce d'Ochnacée n'ait encore été signalée à Java, dont la végétation est d'ailleurs si semblable à celle des îles adjacentes.

Les *Gomphia* à stipules libres s'étendent dans le nouveau monde depuis les parties chaudes du Mexique, d'où l'on connaît deux espèces, et les Indes Occidentales, dont les îles en ont offert huit, jusqu'à l'Ile St. Catherine, où le *Gomphia pulchella* ferme leur marche vers le sud. Abstraction faite du Mexique et des îles, il reste au continent Américain quarante-et-quatre espèces de *Gomphia*, et, sans aucun doute, ce chiffre est loin d'en représenter le nombre réel. Tels qu'ils sont pourtant, les résultats numériques de nos recherches qui nous permettent de saisir quelques faits remarquables dans la distribution du genre: d'abord, son absence absolue dans la flore du Pérou; sa rareté dans celle de la Nouvelle Grenade, d'où M. de Humboldt seul a rapporté une espèce : et, tandis que dans les régions peu explorées qui s'étendent vers le nord, entre le fleuve des Amazones, les Andes de la Colombie et l'Océan, huit espèces ont été observées, le Brésil à lui seul en a fourni quatre fois ce nombre. Il est vrai que pour donner à ce calcul un intérêt très réel, il faudrait l'appuyer sur des limites moins arbitraires que celles des divisions politiques : mais un tel degré de perfection sera long-temps le but et non l'apanage de la science ; et bien long-temps le zèle et la patience des naturalistes s'exerceront sur des calculs approximatifs, au lieu de déduire les conséquences de principes fixés et de données numériques complètes.

La grande proportion de *Gomphia* que renferme la flore de Brésil se conçoit, d'un côté, par la vaste étendue de son domaine, mais plus encore par la végétation variée qui en couvre la surface et dont chaque type, réclamant d'ordinaire quelques espèces de chaque grand genre, en modifie l'apparence extérieure, sans effacer les traits qui les rattachent à leurs familles respectives. Les forêts vierges ont leurs *Gomphia* à tronc droit et souvent élancé ; les espèces des *Carrascos** ne sont plus que des buissons nivelés aux proportions de ces forêts naines : d'autres espèces figurent parmi ces arbustes rabougris et tortueux, à écorce subéreuse et le plus souvent rougeâtre, qui sont clairsemés dans les *campos* du *Certão* du *Rio San Francisco* et de la province de Goyaz ; c'est encore à la flore des *campos* qu'appartiennent ces espèces de *Gomphia* dont les tiges simples, droites et roides, s'élèvent à peine de quelques pieds d'un caudex presque souterrain.

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* C'est le nom qu'on donne au Brésil à des sortes de forêts naines formées d'arbrisseaux de trois ou quatre pieds très serrés les uns contre les autres. Ce genre de végétation caractérise surtout les plateaux élevés de la chaîne de montagnes qui traverse la province des Mines. Il occupe une place importante dans les tableaux qu'ont tracé de cette province d'un côté M. Aug. St. Hilaire, et de l'autre MM. Martius et Spix.

TABLEAU COMPARATIF

DE LA

DISTRIBUTION GÉOGRAPHIQUE DES OCHNACÉES CONNUES.

OCHNACÉES.	Nombre des espèces.	Afrique australe extratropicale.	Afrique tropicale. Madagascar. Ile Maurice.	Ind. Or. extratropicale.	Asie tropicale.	Am. mérid. presque tropicale.	Amérique tropicale.
Sect. 1 LUXEMBURGIÉES							
Genr. 1 Luxemburgia	6	..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	6 Brésil.
2 Godoya	2	..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	2 {1 N. Grenade. 1 Pérou.
3 Blastemanthus	1	..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	1 Guy. Brésilienne.
4 Cespedesia	2	..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	2 {1 N. Grenade. 1 Pérou.
Sect. 2 EUTHÉMIDÉES							
Genr. 1 Euthémis	2	..	.. .. ..	.. .. ..	2 {Sumatra. Penang. Malacca.		
Sect. 3 GOMPHIÉES							
Genr. 1 Gomphia Sect. 1....	.... 69 {14	..	11 {7 Afr. occid. .. .. 4 Madag.	.. .. ..	3 {1 Ind. Or. Ceyl. Phillippines. 1 Sumatra. 1 Pénang.		52 {8 Ind. Occ. 2 Mexique. 1 N. Grenade. 2 Vénezuéla. 5 Guyanes. [Angl. et Franç. 1 Guy. Brésilienne. 35 Brésil.
Sect. 2....	 55	..	.. .. ..	.. .. ..	.. . ..	1 Ile Ste. Cather. (Brés. mérid.)	
2 Ochna	20	5	6 {2 Afr. occ. 1 Ile Maurice 3 Madag.	1 Népal.	8 {1 Arab. heur. 2 Ceylan. 5 Ind. Or.		
3 Elvasia	2	..	.. .. .	.. .. ..	.. ..	.. . .	2 Guyanes.
Genr. 8	104 esp.	5	17	1	13	1	67

Démontrer, comme le fit M. Aug. de St. Hilaire, que la prétendue coïncidence carpologique des Simaroubées et des Ochnacées repose sur une erreur d'observation, c'était, dans le fait, rompre le seul lien qui semblait unir ces familles, et laisser toute leur importance aux différences que De Candolle a pris soin de signaler entre les deux. Mais, dans ce cas, comme dans mille autres, l'influence du préjugé a prévalu sur l'évidence la plus claire, en sorte que le premier pas à faire vers la recherche des vrais rapports des Ochnacées, c'est de sortir du cercle où une sorte de fatalité les a fixées jusqu'à ce moment. Laissant donc les Simaroubées à la place que l'opinion presque unanime leur donne, dans la même classe que les Diosmées et les Méliacées, il s'agit de saisir chez les Ochnacées, non pas des caractères de détail dont les analogues se retrouvent chez toutes les classes, mais ce *concensus* de *facies*, de propriétés et d'organisation qui résume la constitution des groupes et trahit presque toujours leurs tendances naturelles.

Et d'abord, par les deux premiers points le contact le plus intime s'établit entre les *Ochna* et les Erythroxylées. Mêmes rameaux comprimés, à bois dur, astringent, à épiderme criblée de lenticelles saillantes; feuilles souvent caduques, même chez des espèces tropicales; stipules scarieuses soudées deux à deux à l'aisselle des feuilles, et, souvent, à l'état d'écailles gemmaires, persistant le long des rameaux en deux séries imbriquées; pédicelles uniflores naissant parfois de la partie dénudée des branches; si tant de points communs n'ont aucun poids dans la balance des affinités, on doit cesser de regarder l'inflorescence comme un caractère essentiel des Ombellifères, l'amertume comme le plus constant de ceux des Simaroubées; il faut renoncer à ces signes extérieurs parce qu'ils sont frappants, et que par eux, Linné et Jussieu ont évité dans la pratique les fautes où devait les conduire une adhésion servile à certaines idées préconçues.

D'autre part, il suffit de rapprocher l'*Elvasia* du *Calophyllum*, pour constater la liaison étroite des Ochnacées et des Guttifères. Si des feuilles alternes et stipulées font distinguer sans peine le premier genre, ses fleurs seules, au contraire, mêlées à celles d'un *Calophyllum*, pourraient défier le tact du botaniste, qui ne chercherait pas dans l'ovaire et la direction des ovules le seul caractère qui les distingue de toutes celles des Calophyllées. Encore cette différence est-elle peu importante, puisqu'elle existe au même degré entre l'Elvasia et les autres genres de la section dont il fait partie: en sorte que les variations de nombre et de direction des ovules suivant chez les Ochnacées et les Guttifères deux échelles dont les degrés se correspondent, multiplient les points de contact de ces deux groupes en opposant à la section des Clusiées celles des Ochnacées capsulaires, aux Calophyllées à ovules définis et dressés du fond d'une loge unique, les Gomphiées à loges monospermes et à ovules ascendants.

Il est un remarquable genre, le *Lophira* de *Sierra Leone*, qui, au facies, au bois astringent, aux feuilles fermes et réticulées, aux pédicelles articulés des Ochnacées, joint les fleurs, le fruit uniloculaire, les ovules dressés et l'embryon sans périsperme des *Calophyllum*; tandis que les pièces de son calice développées sous le fruit d'une manière très inégale ont fait naître l'idée de ses rapports avec les Diptérocarpées. Dans le fait, il serait également anomal dans les trois familles auxquelles il emprunte ses caractères les plus frappants, puisque ses styles seuls ne trouvent leurs analogues dans aucune d'elles. J'espère reprendre ce sujet avec détail en faisant connaître la structure excentrique et jusqu'ici peu comprise du curieux genre *Ancistrocladus*, Wall.

L'union immédiate des Gomphiées et des Luxemburgiées polyspermes, n'affaiblit en rien l'affinité de ces dernières avec les élégants *Lavradia*. Au contraire, les rapports directs qu'un ingénieux botaniste* a si bien saisis entre ces plantes sont confirmés par leur tendance commune vers un nouveau groupe dont les éléments restent épars et que je ne saurais définir ici sans anticiper d'une manière incomplète les conclusions d'un prochain travail. Il me suffira de citer parmi les genres décrits de ce nouveau groupe (*Ixionantheæ*) l'*Ixionanthes*, Jack (*Emmenanthus*, Hook. et Arn. *Gordoniæ, sp.* Roxb.); et l'*Ochtocosmus,* Benth.

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* M. Aug. de St. Hil.

Ce qui manquait à Linné pour donner de ses *Ordines naturales* autre chose qu'une esquisse inachevée, ce que Jussieu a remplacé mille fois par un tact merveilleux et en quelque sorte instinctif, c'était la connaissance d'un nombre de plantes suffisant pour combler d'immenses lacunes dans le champ que la nature leur ouvrait. Une telle excuse, quoique plus faible de jour en jour, restera long-temps aux erreurs de cette partie de la science. Hier, des feuilles simples semblaient être un caractère essentiel des Ochnacées; aujourd'hui les feuilles pinnées du *Godoya splendida,* dirigent notre attention vers des familles qu'on aurait à peine songé à rapprocher de ses congenères. La ressemblance frappante de ces feuilles avec celles de plusieurs Swartziées (le *Zollernia*, Mart., par exemple) rappelle tout d'un coup d'autres coïncidences entre les Ochnacées et le groupe entier des Légumineuses. L'excentricité des ovaires, les étamines unilatérales et souvent en partie stériles, les anthères transversalement ridées et ouvertes au sommet par des pores, les bractées et stipules scarieuses et finement striées, tant de points communs à des Ochnacées et des Cassia, trahissent une affinité que d'autres genres vont rendre plus claire, tout en prouvant qu'elle n'est pas immédiate.

Admettant, sur des évidences bien reconnues, la liaison étroite des Légumineuses et des Connaracées, un seul chaînon peut à la rigueur suffire pour rattacher ces dernières aux *Gomphia.* Il nous est fourni par un genre nouveau,* dont je regrette de ne pouvoir illustrer par une figure les remar-

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* **Rigiostachys**, gen. nov.

Calyx quinquepartitus, laciniis oblongis, membranaceis, coloratis, æstivatione imbricatis. Petala 5, lineari-oblonga, tenera, lutea. Stamina 10, subæqualia, sub disci depressi margine 10-undulato inserta, basi articulata. Filamenta subulata; antheræ parvæ, oblongæ, biloculares, quables caractères. C'est un arbre du Mexique, avec les feuilles d'un *Sapindus*, et des fleurs qui rappellent autant celles d'un *Gomphia* par leur aspect, que celles du *Suriana* par leur structure. En attendant, que la connaissance de ses graines fixe tous les doutes sur sa place, je le placerais

loculis rima laterali dehiscentibus. Ovaria 2, glaberrima, singula supra tuberculum elevatum albidum inserta, subglobosa, antice versus medium stylifera. Styli liberi stigmate capitato terminati. Ovula in ovario quoque 2, versus styli insertionem peritrope affixa, collateralia, amphitropa, micropyle infera? Fructus . . . .

Arbor Mexicana, foliis alternis, imparipinnatis, foliolis 9-11 alternis, breve petiolatis, oblongis, cuspidatis, margine revolutis, subtus elevato-nervosis, rachi inter foliola anguste alata; stipulis semi-ovatis, brevibus, subdistinctis, intraaxillaribus: paniculæ terminalis, vastæ, ramis distichis, patentibus, strictis, tertiariis spiciformibus, conferte squamato-bracteatis; bracteis parvis, ovatis, concavis, bracteolas 2 in axilla foventibus, pedicello duplo brevioribus; floribus eas *Gomphiarum* referentibus.

Species unica: Rigiostachys *bracteata*.

HAB. in montibus ditionis Oaxacanæ, versus mare Pacificum, *Galeotti*, n. 7144, in herb. Hook, Nom. vernacul. *Corazon bonito*, ex Galeotti.

Rami cylindrici, sub foliis lineis tribus parum elevatis e lateribus et dorso petioli decurrentibus angulati: epidermide brunnea, lenticellis crebris, punctiformibus, ei concoloribus exasperata. Folia (suprema) respectu paniculæ brevia; rachis communis 3-4 pollicaris; foliola oblonga, 1½-2 poll. longa, subdimidio lata, basi subæqualia, subobtusa, apice sæpius acuminata, margine integro, revoluto, obsoletissime undulata, chartacea, sicca fragilia, supra pube brevissima, tactu tantum perceptibili induta, subtus imprimis secus reticulum nervorum venarumque elevatum puberula et intra nervos granulis minutissimis albidis crebre conspersa. Stipulæ brevissimæ, in axilla petioli semi-conditæ, gemmulam eis parum longiorem stipantes. Panicula sesquipedalis, axi primario hinc illinc ramos paucos patentes, iterum ramuliferos distiche exserents, apice in racemulos spiciformes confertiuscule diviso. Racemi floridi 1-3 pollicares, stricti, inter flores subflexuosi; bracteæ parvæ, semi-amplectentes, ovatæ, concavæ, scariosæ, margine subfimbriolatæ, dorso cinereo-pubescentes; bracteolæ 2 bracteæ subconformes, in ejusdem axilla sessiles. Pedicelli vix 2 lin. longi, glaberrimi; calyx verosimiliter persistens, laciniis basi marginibus parum imbricatis, extus sub apice puberulis, brunneis, intus glabris, viridi-flavescentibus; petala calice subduplo longiora, 2½-3 lin. longa, vix 1 lin. lata, sicut genitalia, glaberrima. Flores odori flavi.

près du *Suriana,* comme un lien de connexion entre les Connaracées et les Ochnacées.

En résumé, le tableau des affinités des Ochnacées, s'il m'était possible de le tracer ici par des lignes, nous présenterait groupées sur leurs limites, dans un ordre à-peu-près circulaire, les Malpighiacées, les Erythroxylées, les Ixionanthées, les Ternströmiacées, les Guttifères, le *Lophira,* les Sauvagesiées, le *Suriana* et le remarquable *Rigiostachys.* Sur un second plan, du côté du *Suriana* seraient les Légumineuses et des Connaracées; et liés aux Ternströmiacées par une affinité long-temps méconnue les genres qui se groupent autour du *Dillenia* et du *Saurauja.*

BOTANICAL INFORMATION.

THOREA RAMOSISSIMA, Bory; *found in the Thames.*

This beautiful and highly curious fresh-water *Alga,* a native of the Adour and the Seine, in France, had hitherto, and only in Mr. Harvey's admirable *Manual of British Algæ,* been admitted into the British Flora, as a native of a pool in a bog, in the county of Donegal mountains, going from Letterkenny to Dunfanaghy, "on the authority of a note in the late Mr. Templeton's MSS. whose well-known accuracy leaves no room to doubt his correctness in this instance, though he has not preserved a specimen in his Herbarium." Even Mr. Harvey had seen no British specimen. It was therefore to my great satisfaction that one of our many gardeners of Kew who take an interest in scientific Botany, and are there sure to be encouraged in such pursuits, Wm. Mc. Ivor, brought to me such a mass of this plant from the Thames, as clearly shows that it must grow there in immense quantities. Its habitat is the bed of the river, above Walton bridge, at low water exposed to view abundantly, and when covered with clear water, showing itself as a vast gelatinous mass, of a purplish-black colour, yet exhibiting its filamentous internal structure in the same way as the *Batrachosperma* do, when seen with the naked eye. Some of the specimens were found to attain a length of 4 feet. Of all our fresh-water *Algæ*, none, as is well known by continental specimens in our collections, make such beautiful specimens for the Herbarium, when neatly laid out on white paper: nor can any be more elegant among the marine *Algæ:* even the colour improves in drying, becoming an intense purple, and giving out in desiccation a red-purple stain to the paper. The largest sized paper is, however, hardly big enough to receive the finest specimens, with their innumerable ramifications, which in themselves are some feet long. Not only does the paper, on which they are preserved, but water, where the specimens are allowed to remain, receive a violet tinge; and linen, and cotton and silk, steeped in this fluid, become more or less deeply impregnated with it: but the colour, like that of many vegetable dyes, is very fugacious. A full history of this plant, and its chemical analysis, are given by Bory de St. Vincent, in the 12th vol. of the *Annales du Musée,* where the genus is first described, and named in honour of its discoverer, M. le Docteur Thore, a naturalist of Dax, and author of a *Flora of the Département des Landes.* In that memoir it is observed, as the result of the chemical analysis: "On voit par ces diverses expériences, combien le *Thorea* se rapproche des plantes qu'on a nommé *animalisées,* par le rapport des principes qui les constituent, avec ceux des êtres plus parfaits. Quant à l'emploi qu'on pourrait faire de la fécule, il est facile; les peintres ont trouvé sa couche plus fine et plus brillante que celle des violets obtenus par d'autres procédés; mais je doute que cette belle couleur fût très-durable, à cause de l'action que l'oxygène doit exercer sur elle, comme le démontre l'une des expériences que nous avons rapportés."

Gutta Percha.

This is a vegetable substance, which though only known to Europeans for a few years, is now extensively used in the arts for various purposes, as a substitute for Caoutchouc, because it has the valuable property of dissolving without being volcanized. But while thus frequently employed, and constituting an important article of commerce, the plant which produces it was unknown, until, by a lucky accident, during the residence of Mr. Thos. Lobb in Singapore, where he has been (and in other Malay islands) employed in a botanical mission by Mr. Veitch of Exeter, he detected this plant and sent home numerous specimens, which prove it to be a new sapotaceous Plant, of which a figure and description will shortly appear in this Journal, under the name of *Bassia?* Hook. Accompanying numerous well dried specimens,* (though unfortunately without corollas), Mr. Lobb judiciously sent small sections of the wood, which is peculiarly soft, fibrous and spongy, pale-coloured, and traversed by longitudinal receptacles or reservoirs, filled with the gum, forming ebony-black lines.

It appears that a gentleman, Dr. Montgomerie, was the person who first brought the *Gutta Percha* into public notice. He writes thus, in the Magazine of Science, 1845, "I may not claim the actual DISCOVERY of *Gutta Percha*, for though quite unknown to Europeans, a few inhabitants of certain parts of the Malayan forests were acquainted with it. Many, however, of their neighbours, residing in the adjacent native villages, had never heard of it; and the use to which it was applied was very trifling, for I could only ascertain that it was occasionally employed to make handles for *parangs*, (or wood-choppers), instead of wood or buffalo horn. So long ago as 1822, when I was assistant-surgeon at Singapore, I was told of *Gutta Percha*, in connexion with caoutchouc; and some very fine specimens were brought to me. There are three varieties of this substance, *Gutta Girek*, *Gutta Tuban*, and *Gutta Percha*. I may here mention that the latter name is often erroneously pronounced in England. The *ch* is sounded by the Malayans like those letters in our word *perch* (a fish). And attention to this point is of some importance; for if our countrymen were to ask the natives for *Gutta Perca*, they would probably be told, that such a substance was unknown, while plenty of *Gutta Percha* might be procured by pronouncing the word correctly. The name is pure Malayan; *Gutta* meaning the gum, or concrete juice of the plant, and *Percha* the particular tree from which it is obtained. I could not help thinking that the tree itself must exist in Sumatra, and perhaps derive its name from thence, the Malayan name for Sumatra being *Pulo Percha*; but though the Straits of Malacca are situated only one degree to the north of Singapore, I could not find that the substance has ever been heard of there or in Sumatra.

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* These form a continuation of those beautiful sets of plants, of which the earlier ones were sent on sale, from Java, and announced at p. 198 of vol. 5 of this Journal, and of which the catalogue of names was published at p. 246 of the same volume. The names of the forthcoming ones will soon appear in the present Journal.

"But to return to the period when I first noticed the *Parang* handle that was made of *Gutta Percha*;—my curiosity being excited by the novelty of the material, I questioned the workman, a Malay woodsman, in whose possession I saw it, and heard that the material of which it was framed could be moulded into any other form, by dipping it into boiling water till it was heated through, when it became plastic as clay, regaining when cold its original hardness and rigidity."

Dr. Montgomerie goes on to say that he purchased the *Parang* handle, and sent for more of the substance, and that on instituting experiments, he ascertained that *Gutta Percha* was likely to prove a most valuable material for making those parts of surgical instruments which had hitherto been formed of caoutchouc, the latter having the inconvenience of being easily injured by damp and hot weather in the Tropics. The Medical Board of Calcutta highly approved of Dr. M.'s suggestion, and the Society of Arts in London awarded him its Gold Medal for the discovery.

Illness prevented Dr. M. at that period from visiting the forests where the tree grows. He, however, ascertained from the natives that the *Percha* is one of their largest trees, attaining a diameter of 3 or 4 feet, that its wood is of no value as timber, but that a concrete and edible oil, used by the natives with their food, is obtainable from the fruit. In many parts of the island of Singapore and in the forests of Johore, at the extremity of the Malayan peninsula, the tree is found: it was also said to grow at Coti, on the south-eastern coast of Borneo, and Dr. Montgomerie accordingly addressed his inquiries to the celebrated Mr. Brooke, resident at Sarawak, and was assured by that gentleman that it inhabits commonly the woods there also, and is called *Niato* by the people, who are not, however, acquainted with the properties of the sap. The tree is often 6 feet in diameter at Sarawak, and is believed by Mr. Brooke to be plentiful all over Borneo, and probably on the thousand islands that cluster to the south of the Straits of Singapore. Its frequency is proved by the circumstance that several hundred tons of the *Gutta Percha* have been annually exported from Singapore since 1842, when the substance first came into notice. There is reason, however, to fear that the supply must shortly decrease, and the price be raised, from the wasteful mode in which the natives collect it, often sacrificing a noble tree, of probably from 50 to 100 years growth, for the sake of 20 or 30 lbs. of gum, which is the largest quantity any one trunk ever affords. The juice might, in all likelihood, be obtained from the *Percha*, as from other trees, by tapping, and thus procuring a smaller portion for several successive years; but this process is too slow for the Malayans, and is also the less likely to be adopted because the forests are common property. The people fell the tree, strip off its bark and collect its milky juice in a trough formed of the hollow stem of the plantain leaf, when being exposed to the air, it soon coagulates.

Dr. Montgomerie suggests, among the less immediately obvious uses to which *Gutta Percha* is applicable, that of making raised type for the blind, and embossed maps for the same unfortunate beings: it takes a clear, sharp impression, and is also tough and durable: he thinks it would likewise be found serviceable in stopping decayed teeth.

In the abstract of the new Patents, given in the October Number of the *Magazine of Science and the Arts*, we notice that C. Hancock, Esq., has taken out a patent for improving the manufacture of *Gutta Percha*. He suggests several methods of purifying the substance, which generally comes home much mixed with extraneous matter:—it may be dissolved by heat and strained; or passed through a screw-press; or melted by the addition of rectified oil of turpentine, and after filtering through flannel or felt, the solvent may be evaporated. In every case, the *Gutta Percha* should form a residuum, of the consistency of dough or putty, this plastic state being gained by the maintenance of a suitable temperature during the above process.

Mr. Hancock would combine *Gutta Percha* with *Caoutchouc*, and a substance called *Jintawan*, (we have no clue as to what this "jintawan" may be), in order to form an elastic material, impervious to water; varying the proportions according to the greater or less degree of hardness or of elasticity required. For making elastic bands, a compound is used, where 50 parts of *Gutta Percha* are combined with 24 of "jintawan," 20 of caoutchouc, and 6 of orpiment or sulphuret. From a mixture of these, Mr. Hancock also prepares a light porous and spongy material, suited for stuffing or forming the seats of chairs, cushions, matrasses, saddles, &c.; likewise, springs of clocks, clasps, belts, garters and string. Wherever the requisite is flexibility and elasticity, then the quantity of *Gutta Percha* should be diminished:—and increased where firmness is wanted. By prolonging the process, much hardness may be acquired, and moulds and balls of *Gutta Percha* will bear turning in the lathe, like wood or ivory. The material is also applicable to useful and ornamental purposes, as picture-frames, door-handles, walking-sticks, chessmen, handles of swords and knives, buttons, combs, flutes, &c. &c.

By the admixture of sulphuric acid, or of a tenth or larger part of vegetable wax or tallow, any degree of solubility, pliancy and softness may be acquired: or the composition may be used as varnish, to cover other materials, concealing any odour, and imparting a surface, impervious to water. In printing and painting of silk or cotton, it seems applicable to many uses, for it amalgamates readily with colours; when interposed between two thin sheets of gold leaf or tin foil, it combines them firmly in one.

Numerous are the purposes to which Mr. Hancock proposes applying the *Gutta Percha*; but the above-named may suffice for our readers.

BOURGEAU'S *Canary Island Plants.*

A second series of this most interesting collection has been issued, and we would strongly urge those who desire to possess them to make an early application (we believe Mr. Heward, Young Street, Kensington, is willing to undertake this commission); for, such fine specimens, so authentically named, and from a country whence it is difficult to obtain plants, cannot fail to be much in demand.

M. Bourgeau has himself returned from the Canaries to Paris with his last collections, and presented a packet of Canary Island seeds to the Royal Gardens of Kew. We hope he will visit some other equally interesting country and benefit science by his future collections.

Subscription towards a Botanical and General Natural-history-Journey to Bosnia.

"This journey, under the general direction of M. von Tommasini, President of the Magistracy of Trieste, is undertaken by Dr. Otto Sendtner, known by his papers on Brazilian *Solanaceæ* and other botanical works, who will leave Munich in Jan. 1847. Well prepared by previous journeys in countries adjoining Bosnia, and acquainted with the general physical character of this province, provided with political protection afforded by a peculiar concurrence of circumstances, he purposes, should he continue to enjoy his present strong health to remain a year at least in Bosnia, and devote himself to making collections in the three main branches of natural history, especially Botany.

To defray the expences of the undertaking he invites Naturalists, Collectors and Directors of Museums to join in a subscription in shares on the following conditions:

Each share to be 50 florins, Austrian Convention money, (rather more than £5, sterling). The payment to be made to President Mucius von Tommasini at Trieste, either on announcing the subscription, or at the latest within six months after the departure of the traveller.

Mr. Sendtner engages to supply to each subscriber from 700 to 800 species of plants, in fine and well-dried specimens; or a proportionate share in the collections which will be made of minerals, petrifactions, shells, insects, or other objects of Natural History. The collections will be sent from Trieste, either all at once at the close of the journey, or in portions as opportunities may occur.

Communications to be addressed till Christmas of the present year, post paid, to Dr. Otto Sendtner, Royal Botanical Garden at Munich."

Bosnia has never yet been visited by Botanists, and from the height of its mountains and geographical position, promises a rich harvest.

SIR THOS. MITCHELL'S *progress on an Expedition to discover a route to the Gulph of Carpentaria.*

The Botanist in the above-mentioned Expedition, Mr. Stephenson,* thus writes to one of his friends in England from—

The Camp,
Baloon River.
April 26, 1846.

"An opportunity having occurred to enable me to send to Sydney, I embrace it to forward you the pleasing intelligence that we are now far beyond the boundary of European inhabitants, all in good health, with cheering prospects of success in this arduous expedition. Sir Thos. Mitchell is gone with a small party, to look for a direct route to the Gulph of Carpentaria, and since he left, a dispatch has been sent him, which arrived here but yesterday, to inform him that Dr. Leichardt had arrived at Port Essington and returned to Sydney. We are now on the banks of a splendid river, called the Baloon, not at present a running stream, on account of the great drought, but it has left self-evident marks of enormous floods, wrecks remaining on the branches of trees, full 30 feet above the present level of the water. The river consists at this time of long reaches, as wide as the Thames above the bridges, two or three miles in length, full of fish, and covered with numbers of wild fowl, but nothing new of the latter has been discovered. We have had exceedingly hot weather, the thermometer as high as 177½° Fahr., and now, although the beginning of winter, it is 104° Fahr. Every thing is burnt up, and hardly any insects are to be seen, except a few

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* Mr. Stephenson formerly made considerable collections of plants in New Zealand, and is likely to render much service to science during the present journey. A list of his New Zealand plants was published by Dr. Joseph Hooker in the 3rd volume of this Journal, p. 411.

Libellulidæ and small *Papilionidæ.* I have procured one specimen of *Buprestis,* a most splendid thing, the only one found, about 1¾ inches long, its general colours black, with corrugations filled with brilliant green, and two large gold spots, one on each elytron. I have also taken some interesting *Carabidæ.* Although the dry bed of the river is fine sand, I have not seen a single *Cicindela,* and, in short, insects at this arid season are very rare.

"Plants in flower are also scarce for the same reason, but, when rain falls, we shall be in a rich field for these interesting objects. Our latitude is now 28° 1′ 30″ south, and our future route is quite undecided."

MR. PURDIE'S *appointment to the Botanic Garden of Trinidad.*

Our readers who have taken an interest in the botanical excursions of Mr. Purdie in Tropical America, of which those in Jamaica have been in part published in the 3rd and 4th volume of this Journal, will be glad to hear that he has terminated his mission on behalf of the Royal Gardens of Kew, after having visited a considerable portion, and especially the high mountains, of New Granada; and his merits are rewarded in his appointment, by the Colonial Office, to the charge of the Botanic Garden of Trinidad, vacant by the death of Mr. Lockhart.* His travels in New Granada have proved eminently successful; they extended from Santa Martha to Bogota, besides various *détours* in his journeys from, and return to, the coast: and the further account of his Mission will be given in this Journal as soon as he will have had leisure to copy out his notes. In the mean time, extracts from his letters more especially bearing upon his collections for cultivation are given in the supplementary matter to the " Botanical Magazine."

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* Mr. Lockhart, as is generally known, was one of the few survivors of the Expedition to explore the Congo, under Captain Tuckey; he was Gardener and Botanist on that occasion.

Extract of a Letter from MR. GARDNER, *dated Royal Gardens, Peradenia, Ceylon, September* 13, 1846.

" My last letter to you was very short, being hurriedly written, amid the confusion of preparations for my visit to the northern parts of the island, and I have had no leisure since. You will be glad to know that the trip was a most interesting one to me, and in every respect very pleasant. Our party was not large, consisting of the Bishop and his lady, the Chief Justice and his lady, with whom I went as a guest, and the Queen's Advocate, Mr. Buller, a brother to the present Judge Advocate. On the evening of the second day after we left Kandy, we arrived at Point Pedro, the northernmost point of the island, and thence proceeded by coach about 21 miles to Jaffna, the old Jaffnapatam. There the Court sat three weeks, which afforded me time for considerable botanical collections. Besides numerous shorter excursions, I made one upwards of 60 miles into the interior, which occupied ten days, and was most successful. The country is flat and sandy, reminding me much of the Pernambuco and Ceará Country, the resemblance being increased by the forests of *Borassus flabelliformis*, which take the place of the Carnahyba palm of Brazil. Thorny *Acacias* are abundant, and some fine *Cassias*. I was quite delighted to find *Azima tetracantha* in the greatest plenty, as well as *Salvadora Persica*, the true Mustard-tree of Scripture. I do not believe that either here or at the other places visited I have picked up much that is new, but I have added several hundred of Malabar and Coromandel plants to the Ceylon Flora.

The ground was almost entirely untrodden. At Trincomalee we remained about a week, where, except some five species of *Rhizophora* and a number of other littoral plants, I did not add very largely to my stock. There had been scarcely any rain for nine months. At first sight I was disappointed with Trincomalee, having heard it compared to the Bay of Rio de Janeiro, which it in no way resembles: none of the hills around rising more than 100 feet. The view, however, from the Flagstaff, overlooking the bay and its islands, is very pretty. At Batacalva we stayed five days, and I was more successful than at Trincomalee. There we saw two of the savages who inhabit the interior of the island—Vidahs. They always go about with bows and arrows, with which they are very expert marksmen. On our return to the east coast, we were obliged to remain nearly a day at Pomben Pass (Adam's Bridge) for the tide, and to kill time, we landed on the Island of Ramisseram, and saw the far-famed Hindoō temple there. At Calpentyne we spent about five days, but I did not meet with much novelty. Our run down to Colombo was very rough, and the steamer being small, we were all more or less sea-sick. At Colombo I remained to botanize a little. I have not yet unpacked my collections, so I cannot say how many species there may be altogether, but I suppose from 800 to 1000.

"11th October. Since my return from Jaffna I have worked up another paper for our Journal, principally on the *Terntrœmiaceæ.* I have united the *Frezieras* of South America to the *Euryas* of India, there being no character by which to distinguish them. I have also given a detailed description of the *Trichopus Ceylanicus* of Gærtner, the *Trichopodium* of Lindley, and for reasons assigned, have removed it from *Aristolochiaceæ* to *Taccaceæ.* It is a curious plant, having the habit of *Anthurium* (*Orontiaceæ*), the male organs of *Tacca* and the fruit of *Asarum.*"

Notes of a Continental Tour, in the summer and autumn of 1846; *extracted from letters addressed to the Editor by a botanical friend.*

(*Continued from Page* 534, *Vol. V.*)

Moscow, September 1, 1846.

Among the Petersburgh botanists I believe I omitted in my last letter to mention Dr. Weinmann, Director of the Pavlovsky gardens, who has been studying a good deal the Cryptogamia of Russia, and has lately published a syllabus of Russian mosses, besides some occasional articles on garden plants, which he cultivates with great zeal. I was much pleased with his acquaintance, which I made at Pavlovsky the day before we left St. Petersburgh. The Moscow collections in Natural History suffer from the rivalry of the new capital, which of course gets much more support from Government; yet there are some zealous botanists here, and an active publishing Natural History Society, whose "Bulletin" is well known to you. The principal herbaria are those of the Société des Naturalistes, and of the University, both in the same building, and about to be united. They consist chiefly of Ehrhart's herbarium, perhaps not quite complete, Hoffmann's (the Umbelliferous writer) of about 8000 species, Trinius' general herbarium of about 5000; all are in good preservation, in bundles enclosed in pasteboard boxes, and these again deposited on the shelves of the presses: and, amongst modern plants, besides a number of miscellaneous parcels received from correspondents, the very rich Russo-Asiatic and Kirghis collections of Karelin—a rival to Turczaninoff's in the number and beauty of the specimens. Besides other collections, Mr. Richter, the librarian of the Imperial University library, has a private herbarium of his own, very rich in Russian plants, and containing also a general collection. There are besides some small Russian herbaria, made by private individuals, and a small collection dried by that extraordinary universal and indefatigable man, Peter the Great; but unluckily the absence of the person having the key of it, prevented my seeing it. The most active, intelligent, zealously working botanist here is, without doubt, Mr. Richter, who has determined and prepared for distribution Karelin's plants: a number of parcels of these have been already sent to various botanists, and others are ready to be given in exchange.

Mr. Karelin himself is very highly spoken of by those who know him here and by a friend of his I met at Nijni, but I have unfortunately not been able to find him. He has a great deal of business on hand, has changed his residence, and Moscow is so large for its population (seven miles long, and four to five miles from barrier to barrier), and the pavement so bad, that it is a hopeless task to seek out those whose exact address is unknown; his companion, Mr. Kiriloff, who met with a melancholy death from illness in a small village, hundreds of miles from any one who knew anything of him, is much regretted.

The Professor of Botany, and Director of the Botanical Garden, is Mr. Alexander Fischer, son of Mr. Fischer the geologist and zoologist. I have had great pleasure in again seeing the father, to whom I was introduced at Hamburgh, in 1830. He is now growing old and rather feeble, but very well, and as zealous as ever about the petrifactions of the Government of Moscow and Russia generally. Mr. Alexander Fischer is said to be a man of great scientific attainments, though not much of a working botanist. A microscope of his invention, for which a medal was awarded to him at Paris, and of which an account is published in the Bulletin of the Société des Naturalistes de Moscow, is spoken of as a very important improvement in principle applicable with great advantage to telescopes, but I am not sufficiently acquainted with the subject to judge of it.

In a letter from Zuccarini, he gives me the following names for some of Fortune's Chinese plants.

A 82 Astragalus lotoides, *Lam.*
A 57 Rosa multiflora, *Thunb.* var. villosior.
A 75 Spiræa crenata, *Sieb. et Zucc.*
A 35 Spiræa Reevesii—S. Chamædrys, *Thunb.*
A 63 Platycarya strobilacea, *Sieb. et Zucc.*
A 98 Moslea, an M. barbata, *Br.?*
A 90 Pittosporum Tobira, *Ait.*
A 33 Elaowua.
A 10 Stillingia sebifera, *Mich.*
A 28 Hovenia dulcis, *Thunb.*
A 58 Hibiscus Syriacus, *Linn.*
A 21 Anemone Japonica, *Sieb. et Zucc.*
A 86 Clematis apiifolia, *DC.*
A 14 „ paniculata, *Thunb. ?*
A 89 „ triternata, *DC.*
A 31 Akebia quinata, *Decaisne.*
A 42 Hydrangea, ab omnibus japonicis diversa.
A 74 Hamamelideæ *gen. nov.*
A 2 Cornus, affinis C. brachypodæ, *C. A. M.* (C. sanguinea, *Thunb.*)
A 101 Vitis Japonica, *Thunb.*
A 9 Panax ricinoides, *Sieb. et Zucc.*
A 103 Tamarix Chinensis.
A 92 Vaccinium bracteatum, *Thunb.*
A 45 Clerodendron trichotomum, *Thunb.*
A 94 Callicarpa Japonica, *Thunb.*
A 90 Melissa Clinopodium, *Benth.*
A 91 Prunella vulgaris, *L.*
A 87 Metaplexis Stauntoni, *Br.*
A 84 Genus novum, affine *Orno.*
A 1 Viburnum dilatatum, *Thunb.*
A 81 „ cuspidatum, *Thunb. ?*
A 48 „ tomentosum, *Thunb.*
A 43 Videtur Patrinia parviflora, *Sieb. et Zucc.*
A 15 Daphne Genkeva, *Sieb. et Zucc.*
A 16 Cryptomeria Japonica, *Don.*

A 71 Smilax China, *Thunb.*
46 Lespedeza argyrea, *Sieb. et Zucc.*
163 Rubus parvifolius, *L.*—R. triphyllus, *Thunb.*
41 Bradleia Sinaica—a. B. obovata, *Sieb et Zucc.* diversa, sed eid. affinis.
80 Rottlera, a R. Japonica diversa.
135 Heisingera racemosa, *Sieb. et Zucc.*
108 Thea Bohea, *L.*
35 Aconitum Sinense, *Sieb.*
51 Clematis paniculata, *Thunb.*
94 „ triternata, *DC.*
29 Justicia Japonica, *Thunb.*
109 Gerardia Japonica, *Thunb.* (non Pterostigma.)
136 Mastacanthus verosim. Barbula Sinensis, *Lour.* a sp. japonica diversum.
168 Scutellaria Indica. [illegible]
82 Salvia Japonica, *Thunb.* (S. Fortuni, Benth.)
130 Statice Fortuni, *Lindl.* a S. Japonica ? diversa.
112 Tripolium vulgare, *Nees.*
159 Edgeworthia papyrifera, *Sieb. et Zucc.*
99 Andropogon Gorringu, *Steud.*
12 Gymnothrix Japonica, *Kunth*
148 Amaryllis Sarniensis, *Lin.*
120 Eriocaulon, a japonicis diversum.

Constantinople, October 19, 1846.

Since I last wrote, from Moscow, I have not seen a great deal in the way of botanical collections, although there certainly are botanists in the South of Russia, who have earned for themselves an European reputation. At Kieff I passed some days with Professor Trautvetter, attached to the University lately established there by the union of the colleges of Kremeniez and Wilna. It is a fine and large building, where a good nucleus has already been formed for collections and museums in various departments. The botanical department is under Professor Trautvetter, who has laid out an extensive Botanical Garden, and is now building a range of plant-houses. As the commencement of a Museum, and that a good one, they have purchased the herbarium of the late Professor Besser, rich in plants of Volhynia, Podolia, and Little-Russia especially, and next to them in Russian and in European plants, but containing also a considerable number of exotic plants obtained by Besser by means of an active correspondence. This herbarium is now being arranged in cabinets well adapted for the purpose, but upon paper, to my mind, of far too large a size. Professor Trautvetter himself has a private herbarium, but which chiefly consists of Little Russian, and especially Kieff plants; and he is now engaged in finishing a Flora of the Government of Kieff. He has also published a great number of short papers in the Moscow and Petersburgh Bulletins on isolated botanical subjects, is now preparing for publication the plants of Meddendorp's expedition to Arctic Russia, and is continuing his Icones Floræ Rossicæ, a small quarto work, with very good outline plates of Russian plants.

Charkoff is another University town, between Moscow and Odessa, lying on the direct road, which we left for the purpose of seeing Kieff and Professor Trautvetter. The Professor of Botany for Charkoff is Mr. Tchernaieff, who, I am told, has herborized much in the neighbourhood of Charkoff; but is now more engaged with cryptogamic plants, especially Fungi. I regret not having met with him.

At Odessa, a flourishing town of eighty thousand inhabitants, although there is a large College, the Richelieu Lyceum, which is almost an university, a Professor of Botany, and a so-called Botanic Garden of two hundred English acres, yet there is neither botanical library nor collections. The Botanical Garden is, in fact, a nursery made on the steppe, for the purpose of at once setting the example of planting the steppe, and affording means for others to follow it. They are now, however, about to lay out a small part of it in a purely botanical collection, or *Ecole de Botanique*. The Professor, Dr. Nordmann, resides there. He is a most zealous naturalist, a native of Finland, who travelled with Demidoff's party in the Crimea, undertaking the zoological, and especially ichthyological department. He has devoted a good deal of time to geology, and made considerable palæozoological collections, especially of fossil shells, &c., in the Crimea, and has within the last few weeks discovered some rich dépots of fossil bones of Mammiferæ in the neighbourhood of Odessa. In Botany he has made very complete collections of the Odessa Flora, which he is about to publish, after having submitted a set of the plants to Grisebach's examination, and has gathered much in the Caucasus and the Crimea, which he has visited fourteen times. I made an interesting herborisation with him on the sea coast, near Odessa, where we found on the 7th of October, between twenty and thirty good plants still in flower, exclusive of common things which I did not think worth gathering.

In the Crimea, I, to my very great regret, missed the patriarch of South Russian Botany, your correspondent M. de Steven, of whom every one speaks so highly. When I passed through Sympheropol, he was absent for a short time at Ekaterinostaff. Notwithstanding his age, he is said to be zealous as ever in the cause of botany, and his knowledge of Crimean and South Russian plants to be as intimate as his collection is extensive.

The Botanical Garden of Nikita on the south coast of the Crimea, under the direction of M. Hartweiss, is much more horticultural than botanical, the object being not that of instruction for an university or medical school, but the dissemination and the encouraging the planting of trees and shrubs which may be usefully grown on the south coast. There are, therefore, no botanical collections attached to it, nor has the Director means of devoting himself to Botany as a science.

Poor Turczaninoff is now established with his collection at Taganrog, which was unfortunately too far for me to attempt paying him a visit. On his arrival at Taganrog not only had he the misfortune to lose the two friends, for whose sake he came to settle there, but in a fall down stairs, he met with injuries which disabled him for months from pursuing the science to which he is devoted, and from which I am told he has but little hopes of recovering completely. He is now, however, it is said, able again to work in his herbarium, which is very extensive and which he is still anxious to enlarge. I have also heard that he thinks of moving to Perm, where he has relatives—an immense journey for him, in his state of health, and with his large collections.

With regard to my own herborising I have had but very little opportunity. As far as Kieff I saw next to nothing worth picking up, and further on every thing was past flower, and so dried up as scarcely to be recognised, excepting a few Steppe *Chenopodiaceæ*. Besides, travelling in Russia, when Botany is not the special or sole object, is not suited for collecting. The long distances to be got over without any accommodation, makes one ill-disposed to stop the gallop of the post-horses in the middle of a stage to pick up a flower; and although, when you reach the end of the stage, they are so long changing horses, that in any other country you might explore a good deal by walking on, yet the Russian stations are generally villages, built on the Russian plan with an utter contempt of space, so that it takes the whole time to get beyond the houses. Besides the little excursion near Odessa, I made a small collection on the south coast of the Crimea; but even there every thing was so burnt up, that I did not think it worth while spending much time in searching after plants.

Here, at Constantinople, in the course of excursions to places in the neighbourhood celebrated for their beauty, I have found several plants that pleased me, because belonging to that Levant Flora, which I only knew in the herbarium; but very little is still in flower, and the really rich country commences at Broussa, and on the range of the Olympus. That mountain is visible from hence, and is one of the lions much visited by travellers from Constantinople. We are, however, just too late; those who returned as we arrived, reported it to be getting so cold and wet, that I did not venture to go, especially as we have not much time to spare.

Mr. Noé who resided formerly at Fiume, and of whose plants from the Littorale, I believe you possess a set, is now settled here. He came originally on a mission to collect plants for the private herbarium of the King of Saxony, and at his Majesty's recommendation, was afterwards appointed by the Sultan, Professor of Botany and Director of the Botanic Garden, at the new College of Galata-Serai. The present Sultan takes great interest in this college or university; attends himself the annual disputations for degrees, and often himself proposes the questions to the students. The college is a considerable set of buildings at the upper end of Pera, and besides the lecture room and apartments for some of the officials, contains a dispensary, a clinical hospital, a library and museum. In one room where the disputations are held, is a considerable number of philosophical instruments, and two other apartments are devoted to natural history. These, besides a small general collection received from France, and some anatomical preparations from Italy, contain already a good commencement of Turkish productions, made chiefly by Mr. Noé, who has the management of all the natural history. In the zoological department are good specimens of some of the fine fishes of these seas; among the geological and mineralogical specimens are several of the different kinds of coal from Rumelia, and some good pieces of fossil woods, as well as gold recently found by Noé on the Olympus. The herbarium is but just commenced, from specimens collected by Noé in a journey made with the Sultan to the Balkan Karna and that neighbourhood, and during his own residence this autumn in the Olympus. Noé has also sets of Rumelian and Olympus plants for sale; I have taken a set, but you are already so rich in the Flora of this country, that I do not think you would find one species which you have not already.

Florence, November 27, 1846.

Shortly after I last wrote to you we came direct by steamboat from Constantinople to Trieste, where we landed on the 9th of this month, the first day of a violent gale from the north, which lasted several days, followed by frost and putting an end to all out-door botanising for this year. At Trieste we found our friend, Mr. Tommasini, risen in point of worldly station, being now President of the Magistracy of Trieste, but at the same time more taken up with official business, and consequently with less leisure for Botany. He has, however, much increased his herbarium; that of his own peculiar region, the Littorale and adjacent mountains, and Istria, is very complete in species, specimens and stations, and is such as the writer of a local Flora ought to possess; he has also added considerably to his general collection, especially from those parts of Europe allied to his own country in their Flora. He is now taking measures for an expedition next season into Bosnia by Sendtner, (author of papers on Brazilian *Solaneæ*, &c., written at Munich), the expences to be defrayed by subscribers to the plants he will collect.* The mountains of Bosnia, from their height and situation, are probably rich, they have never been visited, and the political state of the country happens to afford at this moment some peculiar facilities. As soon as the arrangements are completed, I will communicate them to you. Dr. Biacollette at Trieste still continues to increase the number of native plants in the Botanic Gardens of which he has the management, and he has lately had a green and hot-house built. He has also published an account of his Botanical tour, some years since with the King of Saxony in Dalmatia and Montenegro, and a Botanical tour on the Schauberg.

At Venice, the only trace of Botany I could find was the

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* See page 38.

Botanical Garden; which, though small, is very well kept by Ruchinger, father and son; but I could learn nothing of any herbarium or botanical amateur in the place.

I was much disappointed at Padua not meeting with Dr. Visiani, who was accidentally absent. Since I last saw him nine years since, the collection of living plants in the garden is very much augmented, and in his house at the garden, he has a good commencement of a botanical library and museum, founded originally upon that left by the former Professor Donati, and Professor Visiani's own collection, rich especially in Dalmatian and Italian plants, and some Egyptian and Oriental collections, which he has published. His Dalmatian Flora, however, makes very slow progress. These Herbaria are, like most continental ones, tied up in bundles, between pasteboards, the individual specimens being loose in double sheets, the bundles, as in several old Herbaria, are put into paste-board cases (resembling gigantic card-cases) and arranged like books on shelves. The time it takes to get at a specimen shows that the Herbarium is not very frequently consulted.

Professor Meneghini is continuing his *Algæ* of the Adriatic and has also lately published a dissertation on *Diatomeæ*, which he considers should be rejected from the vegetable and restored to the animal kingdom. He is preparing for the press a course of lectures on Botany. His Herbarium is chiefly rich in *Algæ*, of which he has upwards of two thousand species, mostly very numerous, instructive, and well preserved specimens, in excellent order. Two or three other amateurs of our science were mentioned to me as residents of Padua, and possessing small Herbaria; but my stay was not long enough to make acquaintance with them.

At Bologna I had much pleasure in becoming acquainted with the two Professors Bertoloni, father and son. The author of the "Flora Italica" is as vigorous, active and cheerful as if it were his own and not his son's hair, that was now commencing to turn grey. They live together in a house belonging to the Botanical Garden, a much smaller one with a much more limited collection than that of Padua, but in very good condition. The Museum consists of a large collection of seeds, of a few old Italian Herbaria nearly destroyed by time and worms, and of Bertoloni's own herbarium. Of this the most important part is the rich and beautifully arranged "Herbarium Floræ Italiæ," a very extensive authentic collection with every specimen very carefully labelled in correspondence with his Flora and other works. If all botanical authors were equally careful in preparing for future consultation the specimens from which they had worked, the value of their labours would in general be much enhanced and always better appreciated.

Bertoloni possesses also a general collection; amongst others an extensive one from Alabama received from Dr. Gates,many of the plants are now describing in his (Bertoloni's) Miscellanea Botanica, and one from Mozambique, chiefly officinal plants, mostly in excellent specimens belonging to the younger Bertoloni and about to be published. Unfortunately, the want of a sufficiently extensive library and general herbarium renders the publication of exotic plants at Bologna a difficult and not always a satisfactory labour.

Florence, on the contrary, is remarkably well provided in this respect, as well as in many things connected with science, literature and art. The private library, formed by the Grand Duke, and opened with great liberality to the use of men of science, is particularly rich in botanical works, including most of the costly works with plates published in England, France and Germany. The copy of the Flora Græca is the only complete one in Italy. The herbarium attached to the Museum of Natural History in the Grand Ducal Palace is rich in South European plants. Amongst exotic ones, it contains Raddie's Brazilian plants, and considerable extension is now given to it by purchases from modern collectors and other means. It is being well arranged, under the direction of Professor Parlatore, on paper nearly as white and as stiff as what we generally use; but a great deal more is consumed, for the specimens are pinned down on half-sheets, and a whole sheet is besides used to enclose each species; the name is placed on the left hand lower corner outside, and the whole done up in bundles between pasteboards with leather straps. This arrangement is very neat, and is less objectionable than bundles tied with string; and, where frequent and rapid consultation is not so much the object, is one of the best I know; but I doubt whether anything but complete glueing will long preserve specimens that are often brought out for examination. Professor Parlatore, whom you saw this summer in England, is very eager in the promotion of botany here. Besides the direction of the herbarium and his lectures, he is at present chiefly occupied with botanical anatomy, and is also continuing his Flora of Palermo. Professor Targioni-Tozzetti, who lectures on botany as well as chemistry at the Academy of Sciences, amongst his numerous occupations connected with medicine and chemistry, is much devoted to medical botany. The botanical articles in the great Diccionario delle Scienze Naturali, now publishing here, taken chiefly from the French Dictionary, are by M. Brucalassi, an Academician, and by Professor Targioni. There are two Botanical Gardens at Florence, the principal, in the Boboli Gardens, is attached to the Museum of Natural History in the Grand Ducal Palace under Professor Parlatore; the other, under Professor Targioni, is attached to the Academy.

MR. GARDNER'S "*Travels in the Interior of Brazil, principally through the northern provinces and the Gold and Diamond districts, during the years* 1836—41."—*One volume* 8vo., *with a Map of the Author's route, and a view of the Organ Mountains.—Messrs. Reeves, Brothers.*

It would be out of character, in this Journal, to direct attention to a work of this kind, simply as a book of Travels; but so much of it is occupied by natural history and especially botany, that we should hardly stand excused did we not notice it, particularly as being the writing of one who has rendered eminent services to the cause of science. Of the nature and extent of these Travels a sketch will be found in Vol. I, of the London Journal of Botany, p. 158. The book, indeed, is full of information of every description; for we know it was the author's maxim, which nothing but necessity could hinder from being carried out, "nulla dies sine linea;" and he tells us that the notes from which the narrative has been drawn up, were, for the most part, on account of the multiplicity of his occupations, written during those hours, which, under other circumstances, should have been devoted to sleep. The admirer of fine scenery, the lover of adventures, the politician, the friend to slavery and the abolitionist, but above all the philosopher, and the naturalist, whether geologist, zoologist or botanist, will equally gain information and pleasure, but especially the latter, from the perusal of this work. The aspect of the vegetation, occasioned by the presence of plants of certain forms, is particularly described, and we regret that we have no space for extracts relating to the palms, the tree-ferns, the climbers and the gigantic trees of the virgin forests. Among the tribes of lesser plants, perhaps the Vellozias, with their singular dichotomous woody stems and liliaceous flowers, the Lychnophoras and the Eriocaulons or Pipeworts, are the most remarkable. The student of British Botany is familiar with our *Eriocaulon septangulare*, the only species of Europe, and there confined to a few islands of the Hebrides and the west of Ireland, (the same plant is found in N. America); but, this and other species, cultivated with difficulty in our gardens, will give but an imperfect idea of the Brazilian Eriocaulons. "When Linnæus," says Mr. Gardner, "published the last edition of his Species Plantarum in 1764, he described only five species; while from Brazil alone, my Herbarium contains upwards of one hundred. Those small plants, quite destitute of stem, with small grass-like leaves rising from the root, and with a single or at most two or three flower-stalks each bearing a solitary head of minute blossoms, but little resemble our southern species; for in Brazil the great number of them are large *suffruticose* plants, often attaining a height of from 4 to 6 feet!, with leafy, very much branched stems, each branchlet terminated by a large white ball, composed of a vast number of smaller heads, placed on peduncles of unequal length. Another remarkable circumstance, connected with these strange productions, is the fact, that the greater number of the Brazilian species do not inhabit water, after the manner of our native British Eriocaulon, but affect the most dry and arid portions of mountainous declivities; while many others grow in parched, flat, sandy places, which are flooded in the wet season."

Between San Romao and the Diamond district, Mr. Gardner ascended a low Serra, covered with a stunted, shrubby vegetation, to which the inhabitants give the name of Carrascos. Many of the shrubs here belonged to forms that were quite new to him, one of the most remarkable being, a fine undescribed species of the curious genus *Lychnophora*,* belonging to the natural order *Compositæ*, and peculiar to the mountains of Minas Geräes; and which, together with the Vellozias, give a decided feature to their peculiar vegetation. "This shrub is about six feet high, with numerous branches issuing nearly horizontally from the upper part of the stem, each bearing a cluster of narrow leaves about half a foot long. The whole plant, with the exception of the upper-sides of the leaves, is covered with a dense coat of long brownish wool, which, in places where it grows abundantly, is collected by the inhabitants to fill their beds and pillows. I afterwards met with some other species with leaves so very narrow, that at first sight, they resembled the Scotch Fir, the likeness being increased by their mode of growth, which is somewhat similar."

Between Ciudade Diamantina and Ouro Preta, our Author observed one of the men belonging to a troop of mules bringing to the camp a handfull of branches, covered with leaves, with which, after holding them for some time over the fire, to render them crisp, he made a kind of tea for himself and his companions. From the fruit Mr. Gardner detected that it was a *Symplocos*, one species of which, the S. *Alstonia*, Humboldt states is employed for making tea in New Grenada, while a closely allied genus *Visnea* (*Visnea Mocanera*) serves a similar purpose in the Canary Islands. The affinity of the genus *Symplocos* with *Eurya*, and consequently with the true Tea (*Thea*), has already been noticed by Botanists, and the habit is very similar. In many parts of Brazil, however, as in Paraguay, Tea, under the name of *Congonha*, is made by the infusion of *Ilex Paraguayensis*, abundant in the woods. During the same journey, shortly after leaving Tapanhuacanga, the most common tree observed was of the natural family of *Labiatæ*, which with us only forms herbaceous plants or small shrubs; here it was the *Hyptis membranacea*, Benth., which attains a height of from 20 to 30 feet, and is the largest of the *Labiatæ* in Brazil.

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* So called, from the singularly woolly coating of the stems and undersides of the leaves.—Ed.

We shall lastly mention the beautiful and singular *Utricularia* (*U. nelumbifolia*,* Gardn.), remarkable no less for its large size (2 to 2½ feet high) than for its place of growth. Like our Bladder-roots, it is aquatic; but is only found "growing in the water which collects in the hollow bases of the leaves of a large *Tillandsia*, that inhabits abundantly an arid rocky part of the Organ Mountains, at an elevation of about 5000 feet above the level of the sea. Besides the ordinary method, by seed, the *Utricularia* is propagated by runners, which it throws out from the base of the flower-stem; this runner is always found directing itself towards the nearest *Tillandsia*, when it inserts its point in the water, and gives origin to a new plant, which, in its turn, emits another shoot; in this manner not less than six plants may be seen united, each deriving support from the water contained as many separate plants of *Tillandsia*." In our Bladder-roots, again, there are no leaves; but bladders (as the name implies) among the roots, which enable the plant to float and bring its blossoms above the surface of the water. In the Brazilian species there are the bladdered roots; and, besides, peltate leaves, 3 inches across, on long footstalks; while the flower-stem bears numerous large purple flowers.

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* See a figure of this rare plant in Hooker's "Icones Plantarum," vol. 6, Tabs. 505, 506.

The volume is well got up by the spirited publishers, Messrs. Reeve, Brothers, and is accompanied by a beautiful view of the Organ Mountains and a map of the route, highly necessary for the information of the reader.

LINDLEY'S "*Orchidaceæ Lindenianæ*."

Dr. Lindley, whose labours in illustrating the Orchidaceous plants, both by splendid figures and descriptions, are beyond all praise, has here again favoured the botanical world with a brochure of twenty-eight pages, describing 143 species of plants of this family, from the dried specimens collected by Mr. Linden in Columbia and Cuba; no fewer than 77 are wholly new to science, including 3 new Genera. Of these latter, the most remarkable is *Uropedium*, Lindl.; having all the character of *Cypripedium*, and the habit of the East Indian *Cypr. insigne*; except that the lip, instead of being slipper-shaped, is plane, and the petals are attenuated into long tails.

There are given also some interesting observations on the elevation above the sea, and the mean temperature, where the species are found:—for example, only one species (*Epidendrum frigidum*) is found at an elevation of from 12,000 to 13,000 feet, where the mean temperature is 40°.—Six at from 11,000; mean temp. 46°.—Thirteen at from 10,000 to 11,000 feet; mean temp. 49°.—Twenty at from 9,000 to 10,000 feet; mean temp. 52°.—Nineteen at from 8,000 to 9,000 feet; mean temp. 56°.—Sixteen at from 7,000 to 8,000 feet; mean temp. 59°.—Twenty-four from 6,000 to 7,000 feet; mean temp. 62°.—Thirty-two at from 5,000 to 6,000 feet; mean temp. 65°.—Hence, in descending, they diminish; for there are but eight species at from 4000 to 5000 feet; with a mean temperature of 68°.—Five at from 3000 to 4000 feet; mean temp. 71°; and only four at from 2000 to 3000 feet, where the mean temperature is 75°.

Professor Jamieson, of Quito, detected an *Oncidium* (O. *nubigenum*, Lindl.) at an elevation of 14,000 feet above the level of the sea. Mr. Linden remarks that the *Epidendrum frigidum*, which only grows at a short distance from eternal snow, is covered all over, flowers included, with a varnish, perhaps intended for its safeguard; and Dr. Lindley observes that all the *Epidendra* (in this collection) with one exception, occur above 5000 feet, and form a continued chain of species up to the habitat of E. *frigidum*.

CH. MARTINS: *Voyage Botanique le long des côtes septentrionales de la Norvège, depuis Drontheim jusqu'au Cap Nord.*

This useful brochure, being an extract from the "Voyages en Scandinavie et au Spitzberg de la corvette, *la Recherche*," commences abruptly, and the objects and motives of the voyage are in no way explained. M. Martins appears to have been attached to the Expedition as Botanist, and his attention to have been especially devoted to the geographical distribution of plants and a comparison between the vegetation of different countries in the middle and north of Europe: and he seems to have made good use of his time and to have studied vegetation with great ardour, as connected with latitude and longitude, elevation above the level of the sea, climate, temperature, atmospheric influence, &c. Such a work hardly admits of extracts. It will be read with interest, and constitutes an important addition to our knowledge of this department of Botany.

GEORGE GARDNER; *on the Structure and Affinities of the Plants belonging to the Natural Order* PODOSTEMACEÆ.

(*From the Calcutta Journal of Natural History.*)

A valuable Memoir on this curious and little-known natural family: the result of the author's investigations is that *Podostemaceæ* are nearly allied to *Nepenthes*, the absence of albumen and the connection of the stamens in the latter being the chief distinguishing characters. Mr. Gardner describes fully all the species that have been detected in India, and which belong to two Genera, *Tristicha*, Thouars, and *Podostemon*, Rich. Until the publication of Dr. Wallich's Catalogue, 1828, no species was known to exist in the East Indies. The above-mentioned Catalogue gives one as a native of Sylhet. In the year 1835, another species was added by the late Mr. Griffith. In 1845, Mr. Gardner, in company with Dr. Wight, detected three new species on rocks in rapids in the bed of the Pycarrah River, in the Neilgherry Mountains; while in Ceylon, Mr. Gardner has added four others: thus no less than ten distinct Indian species are described in this work; and we know that the author has distributed to his friends in Europe beautiful specimens of his discoveries.

CAROL. HENRICUS SCHULTZ; *on* "HYPOCHŒRIDEÆ."

(*From the Act. Acad. Nat. Cur.*)

This is an elaborate Memoir on a small group of Cichoraceous *Compositæ*, equivalent to the Genus *Hypochœris* of Linnæus; now divided by the learned Bipontine into *Achyrophorus*, C. H. Sch., 20 species; *Fabera*, C. H. Sch., 2 species; *Hypochœris*, DC., 7 species; *Piptopogon*, Cass., 2 species; and *Seriola*, L., one species.

FILIPPO PARLATORE; "FLORA PALERMITANA, *ossia Descrizione delle Piante che crescono spontanee nella valle di Palermo.*" Part I. of Vol. I.

This Part only includes a portion of the Grasses, but enough is done to show that it will add to the fame which the learned author has already earned for himself. It is in Latin, with some observations in Italian: and the descriptions appear to be made carefully from the plants themselves. It would seem, however, hardly necessary for the author at p. 127 to introduce under *Pappophoreaceæ*, the subtribe "*Pappophoreæ, stigmatibus plumosis haud elongatis,*" and then add: "Non si trovano generi di questa sotto-tribù nelle graminacee di Palermo." It reminds one of the chapter in Horrebow's History of Iceland "On Timber Trees," followed by the remark "there are no trees in all Iceland."

FILIPPO PARLATORE; *Monografia delle Fumariee.*—Firenze, 1844.

A little volume of rather more than 100 pages, containing a very elaborate history of the *Fumarieæ* group of *Fumariaceæ*, including *Fumaria*, Bern., *Platycapnos*, Bern., *Discocapnos*, Cham. et Schlecht., and *Sarcocapnos*, DC. No new Genera, nor even species, are added; but the synonomy is worked out with great care and the species settled on firmer bases than hitherto.

TH. F. LUD. NEES AB ESENBECK; *Genera Plantarum Floræ Germanicæ, iconibus descriptionibusque illustrata; Opus post auctoris mortem* T. C. L. Spenner, A. Putterlich *et* St. Endlicher *continuatum.*

We have before us as far as Fasc. 24 of this valuable work; which, though excellently conducted by the late Dr. T. F. L.

Nees von Esenbeck, has lost nothing in point of value in the hands of the present editors. The plates, with the full analyses of the Genera, many of them drawn by Dr. Putterlich himself, and the descriptions, are executed with as much care, and are deserving of the same praise as when we noticed them at an earlier period. The two last Fasciculi are chiefly devoted to *Corolliflorœ* and *Compositœ*, and we shall be happy to see a work so useful, especially to the student of European Botany, progressing more rapidly.

Illustrations of SOUTH AMERICAN PLANTS, *by* JOHN MIERS, F.R.S., F.L.S., &c.—4to. Part I. 1846, 8 plates. Baillière.

Mr. Miers is too well known as a scientific traveller in South America, and by his admirable botanical memoirs in the Linnæan Transactions and elsewhere, to need any commendations in this place. He has in the present work brought his faithful pencil into practice, and in this number, the first of a series of South American *Solaneœ,* he has executed all the drawings and lithographs with great fidelity and effect, accompanied by ample analyses. The descriptions, as the preface explains, are a reprint, with a few needful alterations, of the Memoir on *Solaneœ* already given in the last volume of the present Journal, to which however are added full descriptions of the plates. Plate 1 represents *Salpichroa* (Perizoma) *rhomboidea.* 2. *Dunalia lycioides.* 3. *Ancistrus cauliflorus.* 4. *Himeranthus runcinatus* and *Himeranthus tridentatus.* 5. *Himeranthus erosus* and *Jabarosa integrifolia.* 6. *Dorystigma caulescens* and *D. squarrosum.* 7. *Trechonœtes laciniata.* 8. *Pionandra* (Ceratostemon) *floribunda.*

This work is a most important contribution to the Flora of South America, and we have much pleasure in being able to state that Mr. Miers is preparing a similar Memoir on the S. American *Menispermaceœ.*

CHLORIS BOREALI-AMERICANA.—*Illustrations of new, rare, or otherwise interesting* NORTH AMERICAN PLANTS, *selected chiefly from those brought into cultivation at the Botanical Garden of Harvard University, by* DR. ASA GRAY. 4to. Decade I. (*From the Memoirs of the American Academy of Arts and Sciences; Vol. IV. New Series*).

We are glad to see that Dr. Gray is following up the publication of the admirable Flora of N. America, the work of himself and Dr. Torrey, with no less excellent illustrations of the rarer plants of the northern portion of the New World. The first "Decade" is now before us. The plates are coloured, and accompanied by excellent analyses; so that, together with the accompanying descriptions and remarks, which display great botanical research, nothing seems wanting towards a complete history of the respective species. The plants here given are: 1. *Corema* (Oakesia, *Tuckerman*) *Comadi,*—Tuckermania, *Klotzch;* as this proves to be a congener of *Empetrum album,* referred to *Corema* by Don, that name is adopted; 2. *Schweinitzia odorata,* Ell. (Monotropa, *Schwein.*); 3. *Obolaria Virginica,* L.; 4. *Gaillardia amblyodon,* Gay; 5. *Brazoria truncata,* Engelm. et Gray, (Physostegia, *Benth.*); 6. *Sullivantia Ohionis,* Torr. et Gr. (Saxifraga? Sullivantii, *Torr. et Gr.*); 7. *Thermopsis Caroliniana,* M. A. Curtis; 8. *Th. fraxifolia,* M. A. Curtis, (Baptisia mollis et fraxinifolia, *Nutt.*); 9. *Th. mollis,* M. A. Curtis, (Podalyria mollis, *Mx.*, Baptisia, *DC.*); 10. *Gaylussacia ursina,* Torr. et Gr.

I. SULLIVANT.—MUSCI ALLEGHANIENSIS; *sive Spicilegia* MUSCORUM *atque* HEPATICARUM *quos in itinere a Marylandia usque ad Georgiam per tractus montium,* A.D. MDCCCXLIII, *decerpserunt Asa Gray et W. Sullivant* (*interjectis nonnullis aliunde collectis.*) *Concinnavit et exposuit* W. S. SULLIVANT. Imp. 4to. Fasc. I. II.

II. SULLIVANT. — *Contributions to the* BRYOLOGY *and* HEPATICOLOGY *of* NORTH AMERICA; *by* WILLIAM S. SULLIVANT, 4to. Part I. (*From the Memoirs of the American Academy of Arts and Sciences:* Vol. III. NEW SERIES.)

The second of these two articles is a worthy companion to the "Chloris Boreali-Americana," above noticed: its execution is highly honourable to the New World, and would do credit to any town or city in Europe. The plates are peculiarly excellent, drawn by Mr. Sullivant himself, full of microscopic dissections, and beautifully engraved. The author, in the execution of the figures, has evidently had Bruch and Schimper's admirable "Bryologia Europæa" in mind, and a better model he could not have chosen.

Many of the species here figured and fully described had already appeared in an equally admirable work of its kind, "Sullivant's Musci Alleghanienses;" a work in 2 vols. of a very large quarto size, containing charming specimens, with printed names, and characters (when required) of 292 species of the Musci and Hepaticæ of North America, many of great rarity, and as the title announces, chiefly gathered in a mountainous district between Maryland and Georgia. The manner in which these are got up is a great improvement upon the excellent "Musci Americani" of Mr. Drummond; and we can say with truth, that two more perfect works of the kind than these (Nos. 1 and 2) mentioned at the heading of this notice, have not appeared in any age or country. The species figured and described in No. 2, are: 1. *Phyllogonium Norvegicum*, Brid.; first detected in Norway, and now found "in large patches, pendent from the perpendicular faces of sandstone rocks, in moist, shady places, near Lancaster, Ohio." It is to be regretted that perfect capsules have not yet been gathered. Though placed in the same genus with a tropical moss, *Pterigynandrum fulgens*, Hedw., (the type of *Phyllogonium*) by Bridel, the author suspects that when its fruit is discovered—and male and female flowers have been detected on the Ohio specimens—it will prove to be *sui generis*. 2. *Fissidens minutulus*, Sull. 3. *Fissidens exiguus*, Sull. 4. *Schistidium serratum*, Hook. et Wils. 5. *Marchantia disjuncta*, Sull. 6. *Aneura sessilis* (Jungermannia sessilis, Hook. et Wils.); and, 7. *Notothylas orbicularis* and *valvata*, Sull.

Catalogue of MR. GEYER'S *Collection of Plants gathered in the* UPPER MISSOURI, *the* OREGON TERRITORY, *and the intervening portion of the* ROCKY MOUNTAINS; *by* W. J. H.

Having at p. 524 of our last volume concluded the interesting narrative of Mr. Geyer's Journey in the above countries, it is now our agreeable task to publish a Catalogue of the plants forming the beautiful Herbarium made during that journey. The numbers, between parentheses, refer to those distributed with the collections.

RANUNCULACEÆ, *Juss.*

1. Clematis *Douglasii*, Hook. Fl. Bor. Am. 1, p. 1. Torr. et Gr. Am. 1, p. 8.

HAB. Borders of wooded mountains and prairies in the Spokan River, Cœur d'Aleine and Nez Percez country, Upper Oregon. Corolla reddish-violet. Many stems rise from one root. April, May. (n. 313.)—These are splendid specimens of a beautiful *Clematis*. A singular use is related by Mr. Geyer to be made of the root of this plant. "At a horse-racing of the Nez Percez Indians, I witnessed the application of the root. It happened that several horses were run nearly to death; so that they fell down during the heat of the day. As soon as such an accident happened, an Indian put a piece of this root (the outer coat scraped off) into the nostrils of the animal: the effect was surprizing, the creature sprang up under convulsions, was brought to the river and bathed, and I found several, which had been so treated, afterwards grazing with the herd, apparently without having sustained any injury."

2. C. *Virginiana*, L.

Hab. Poplar groves and thickets along the banks of rivulets, Upper Columbia River. Aug. (n. 617.)

3. C. *verticillaris*, DC.—Atragene Americana, *Linn.*

Hab. Only seen on the gentle elevations at the foot of the Cœur d'Aleine, about St. Joseph's, climbing over *Amelanchier Canadensis.* April. (n. 615.)

1. Anemone *nemorosa*, L.—var. *quinquefolia*, Torr. et Gr.—A. quinquefolia, *L.*

Hab. High alpine shady woods, Cœur d'Aleine mountains. (n. 606.)

1. Ranunculus aquatilis, L. γ. *cæspitosus*, DC.

Hab. (This in my collection is without No.)

2. R. *Flammula*, L.

Hab. High grassy plains of Cœur d'Aleine. (n. 306.)

3. R. *reptans*, L.—DC.—Torr. et Gr.—R. Flammula, var. *Hook. Fl. Bor. Am.*

Hab. Stony exsiccated water-courses in sunny places, Upper Oregon. July, Aug. (n. 213.)

4. R. *Cymbalaria*, Ph. Hook. Fl. Bor. Am. 1. p. 11. Torr. et Gr. 1. p. 17.

Hab. Swampy springy meadows, between the Upper Platte and Sweet Water River, with R. *sceleratus.* July. (n. 132.)

5. R. *brevicaulis*, Hook. Fl. Bor. Am. 1. p. 13. t. 7. A.—Torr. et Gr. 1. p. 18.

Hab. Plains of Upper Columbia River. Feb. Mar. (n. 459.)

6. R. *sceleratus*, L.

Hab. Swampy springy meadows, between Platte and Sweet Water rivers, growing with R. *Cymbalaria.* July. (n. 134.)

7. R. *acris*, L.; *var.* caule appresso-pubescente, foliis inferioribus minus divisis basi magis acutis, segmentis angustioribus.

Hab. In a fertile swampy meadow at the Upper Sweet Water River. Aug. (n. 110.)—This quite agrees with

R. *acris* in the root and flower and fruit; but the pubescence of the stem is rather dense and appressed, as well as on the leaves, and the root-leaves are not cordate at the base, but almost acute or wedge-shaped, and the segments fewer and narrower.

8. R. *hispidus*, Mx.

HAB. Abundant on the Gamass prairies of Cœur d'Aleine; not seen elsewhere. August. (n. 303.)

9. R. *Pennsylvanicus*, L.; *var.* α. minus hirsutus, foliis caulibusque gracilioribus.

HAB. Muddy margin of swamps, Upper Columbia, Fort Colville. August. (n. 580.) — *var.* The only *Ranunculus* seen in the valley of Upper Platte or Sweet Water River, 1839; at Devil's Lake, quite prostrate. (n. 579.)

10. R. *tenellus*, Nutt. Torr. et Gr. Am. 1. p. 23.

HAB. Swampy grounds about springs and rivulets, Kooskooskee Valley. (n. 400.)

1. Myosurus *minimus*, L.

HAB. Borders of pools in the Gamass prairies of the Cœur d'Aleine, with *Isoetes lacustris*. May. (n. 322.)

1. Coptis *occidentalis*, Nutt. Journ. Acad. Sc. Philad. 7. p. 9. t. 1. Torr. et Gr. Am. 1. p. 28.

HAB. Low, dry, shady pine woods, Upper Oregon. April. (n. 614.)—Of this very rare plant, only previously discovered by Mr. Wyeth (Nutt.) in the "Rocky Mountains," the specimens are in fruit, in which state it was unknown to Botanists. As Nuttall suspected, the scape lengthens in age, and its 3 fruit-bearing branches (themselves 2-3 inches long) are borne upon a stalk a span high. The plant is evergreen, Mr. Geyer observes, and, in spots where it grows, covers almost every square foot of the ground.

1. Delphinium *Menziesii*, DC. Hook. Fl. Bor. Am. 1. p. 25. Bot. Reg. t. 1192. D. simplex, *Hook.*

HAB. On the mountains close to the Upper Columbia; abundant in the Cœur d'Aleine country. Inner petals fuscous, bearded. May. (n. 600.)

2. D. *simplex*, Hook. Fl. Bor. Am. 1. p. 25; and var. *distichi-*

florum. D. distichum, *Geyer, Ms.;* glabrum, foliorum segmentis latioribus minus divaricatis.

Hab. Slopes of the undulating plains between Kanzas and Platte Rivers, with *Œnothera serrulata,* (n. 163.)—*Var.* Grassy stony borders of rivulets, high plains of Spokan and Nez Percez, (n. 420.)—Our D. *simplex,* Messrs. Torrey and Grey unite with D. *Menziesii*; probably with justice, for it is as difficult to define the limits of the American species of this Genus as of the European ones. Again, it must be allowed that the *var.* here given of D. *simplex* has a very different appearance from that species, in its glabrous leaves, with broader, shorter, and blunter laciniæ, and (according to Geyer) regularly distichous flowers: —yet I fear there are no permanent distinguishing characters.

1. Actæa *rubra,* Big. Hook. Fl. Bor. Am. 1. p. 27. Torr. et Gr. Am. 1. p. 35.

Hab. Deep shady defiles, borders of rivulets, Nez Percez Mountains, near the snow line. June. Berries deep-red, oval. (n. 520.)

1. Thalictrum *dioicum,* L.

Hab. Low alpine woods, Cœur d'Aleine country. May. (n. 622.)

Berberideæ, *Juss.*

1. Berberis *Aquifolium,* Ph.

Hab. Stony banks; most abundant on precipices of Trap mountains of the Upper Platte to the Lower Columbia: very abundant. April, May. (n. 370.)

Cruciferæ, *Juss.*

1. Cheiranthus *capitatus,* Dougl. in Hook. Fl. Bor. Am. 1. p. 38. Torr. et Gr. Am. 1. p. 71. C. asper, *Cham. et Schlect. in Linnæa,* 1. p. 14.

Hab. Sunny rocks, highlands of Nez Percez: rare. May. (n. 399.)

1. Nasturtium *Curvisiliqua*, Nutt. Torr. et Gr. Am. 1. p. 73. Sisymbrium Curvisiliqua, *Hook. Fl. Bor. Am.* 1. p. 61.

Hab. Stony borders of the Cœur d'Aleine Lake. June: rare. (n. 383.)

2. Nasturtium *palustre*, DC. Hook. Fl. Bor. Am. 1. p. 39. Torr. et Gr. Am. 1. p. 73. Sisymbrium palustre, *L.*

Hab. Muddy banks of rivers, Upper Oregon. July. (n. 482.)

1. Barbarea *vulgaris*, Br.—Erysimum Barbarea, *L.*

Hab. Stony borders of Lake Cœur d'Aleine and Kooskooskee Rivers. April, May. (n. 604.)

1. Turritis *glabra*, Br.

Hab. Thickets in sunny places, Kooskooskee valley: common. May, June. (n. 353.)

2. T. *patula*, Grah. in Edinb. Journ. 1829, p. 7. Hook. Fl. Bor. Am. 1. p. 40. Torr. et Gr. Am. 1. p. 79.

Hab. Swampy rocks, Cœur d'Aleine Mountains: rare. May. (n. 646.)

3. T. *retrofracta*, Hook. Fl. Bor. Am. 1. p. 41. Torr. et Gr. Am. 1. p. 79.

Hab. Alpine ravines, mountains of the Kooskooskee River, in thickets. (n. 564.)

1. Arabis *hirsuta*, L.

Hab. Banks of Black's Fork of Upper Colorado, in dry denuded places, August, rare. (n. 364); and alpine ravines in the mountains of Kooskooskee River, (n. 565.)

1. Cardamine *hirsuta*, L.—C. Pennsylvanica, *Muhl.*

Hab. Along rivulets; Valley of Flathead, or Upper Clarke's River. Sept. (n. 181.)

1. Sisymbrium *canescens*, Nutt. De Cand. Prodr. 1. p. 194. Hook. Fl. Bor. Am. 1. p. 62. Torr. et Gr. Am. 1. p. 92. (var. *a.*)

Hab. Mountain rocks; alpine ravines, Kooskooskee. June. (n. 675.)

1. Erysimum *asperum*, DC. Hook. Fl. Bor. Am. 1. p. 64. t. 22.—E. lanceolatum, *Ph.*

Hab. In sunny places, in the high stony plains of Uppe

Platte, scarcely seen at the Kooskooskee. Flowers with the fragrance of *Cheiranthus Cheiri*. June. (n. 153.)

1. Pachypodium *integrifolium*, Nutt. in Torr. et Gr. Am. 1. p. 96.

Hab. Sandy inundated places, valley of Upper Platte and Sweet Water River, growing with *Cleome integrifolia* and *Asclepias speciosa*. July. (n. 234.) This has been also found abundantly by Mr. Tolmie; and by Mr. Douglas during his last journey in the Oregon territory.

1. Vesicaria *alpina*, Nutt. in Torr. et Gr. Am. 1. p. 102.

Hab. Sunny calcareous cliffs; hills of Upper Platte, near the "Chimney Rock." June. (n. 60.) Mr. Nuttall seems to have discovered it on the same spot, and it appears to have been found in no other locality, and by no other Botanist. A beautiful and very distinct species.

2. V. *Ludoviciana*, DC. Torr. et Gr. Am. 1, p. 101.—Alyssum Ludovicianum, *Nutt. Gen. Am. 2. p.* 63. Myagrum argenteum, *Ph.*

Hab. Gravelly calcareous hills of Upper Platte, towards the Black Hills:—partly prostrate. July. (n. 278.)

3. V. *Geyeri*, Hook.; perennis, stellatim incana, radice fusiformi, caulibus e collo numerosis, foliis longioribus radicalibus suborbiculatis longe petiolatis, foliis caulinis lanceolatis sessilibus sparsis, siliculis late obcordatis bilobis compresso-inflatis stylum longitudine æquantibus. (Tab. V.)

Hab. Sunny sandy declivities on elevated volcanic places, Upper Spokan River. April. (n. 476.)

A new and very remarkable species, with much the habit of V. *didymocarpa*, especially in the mode of growth and in the radical leaves; but the fruit is totally different, though somewhat membranaceous and inflated, and two-lobed; it is broadly obcordate, densely stellate, pubescent, two-lobed, compressed, of so membranous a texture that the pericarp shrinks or falls in between the four seeds (two in each cell), rendering the surface very unequal. The style is as long as the silicule.—(Tab. V. *Fig.* 1. Portion of a flower; *f.* 2. Silicula; *f.* 3. Seed.)

1. Draba *glacialis* ? Adams.

HAB. On an isolated calcareous cliff in the Black Hills on the Horse River. July. (n. 267.) — I am rather doubtful about this species, my specimens possessing neither flower nor perfect silicules; but, judging from the nature of the leaves and the pubescence, I think it is that species.

2. Draba *lutea*, Gilib.—β. longipes, *Hook. Flor. Bor. Am.* 1. p. 55. *Torr. et Gr. Am.* 1. p. 107.

HAB. Moist borders of hills, Cœur d'Aleine valley, and on the sandy banks of Columbia river, at Fort Colville. March—May. (n. 626.)

1. Platyspermum *scapigerum*, Hook. Fl. Bor. Am. 1. p. 68. t. 18. B. Torr. et Gr. Am. 1. p. 112.

HAB. Wet rocks and water-courses in the plains, Upper Oregon, Cœur d'Aleine and Chuelpee country; forming dense carpets, rarely solitary, on rocks. Corolla white; silicule pale green with purple dots. (n. 597).—There are very beautiful specimens in all stages, from the flower-bud, to the large ripened fruit, which, when fully formed, is essentially orbicular, and as large as a silver penny.

1. Thlaspi *cochleariforme*, DC. Hook. Fl. Bor. Am. 1. p. 58. Nutt. Journ. Acad. Philad. 7. p. 13. Torr. et Gr. Am. 1. p. 114.

HAB. On the high, cold, swampy prairies of the Cœur d'Aleine, surrounded by high mountains. Somewhat stoloniferous. Leaves purplish. (n. 305).

1. Lepidium *Virginicum*, L.

HAB. Indian camps, Kooskooskee river valley, growing with *Erodium Cicutarium*. June. (n. 389)

2. L. *integrifolium*, Nutt. in Torr. et Gr. Am. 1. p. 176.

HAB. Saline clayey denuded places, about the sources of Muddy river, and along the valley of Bear River. July, August. (n. 81).—Exactly agreeing with Mr. Nuttall's original specimens from the western side of the Rocky Mountains about the borders of the Oregon.

1. Thysanocarpus *curvipes*, Hook. Fl. Bor. Am. 1. t. 18. A. —Torr. et Gr. 1. p. 118.

Hab. Stony moist sunny declivities, and slopes of the high plains towards Kooskooskee valley: rare. May. (n. 343).—Judging from an extensive suite of specimens gathered in California by Dr. Coulter and presented to me by Dr. Harvey, the silicules of the winged group of this genus are very variable, and the number of published species ought to be reduced.

2. T. *oblongifolius,* Nutt in Torr. et Gr. Am. 1, p. 118.

Hab. Stony ridges, valley of Cœur d'Aleine river: rare. April, n. 607.—A very distinct species from the preceding, the fruit being apterous; in that respect allied to T. *pusillus,* Hook. Ic. Plant. t. 43.

Capparideæ, *Juss.*

1. Cleome *integrifolia,* Torr. et Gr. Am. 1. p. 122. Peritoma integrifolia, *Nutt. in Journ. Acad. Sc. Philad.* 7. p. 14.

Hab. Moist sunny sandy places, river valley of the Platte, extending to the Upper Sweet Water River; whence its place is taken by C. *aurea,* Nutt. It was also detected at Upper Big Sioux River, Missouri. July. (n. 168).

Polygaleæ, *Juss.*

1. Polygala *alba,* Nutt. Gen. Am. 2. p. 87. De Cand. Prodr. 1. p. 330. Torr. et Gr. 1. p. 131.

Hab. Gravelly hills, Upper Platte, growing with *Mammillaria simplex* and *Evolvulus argenteus:* the specific name is not appropriate, for the flowers vary to deep reddish violet and purplish. June, July. (n. 276).—It seems to be the same as P. *Beyrichii* of Torr. et Gr. 1. p. 120, and Messrs. Torrey and Grey suspect it is not different from P. *Senega,* which is assuredly a very variable species.

Violarieæ, *DC.*

1. Viola *striata,* Ait.

Hab. Moist fertile alpine woods; poplar groves in the valley and mountains of Cœur d'Aleine River. April, May. (n. 602).

2. V. *Muhlenbergii,* Torr. Fl. 1. p. 256. Torr. et Gr. Am. 1. p. 140. V. Muhlenbergiana, *Ging. Hook. Fl. Bor. Am.* 1. p. 78.

HAB. Meadows and low woods in river valleys, Upper Oregon, always in bloom, even under the snow (n. 608 in flower), and among willow-thickets of springy swampy meadows between Upper Platte and Sweet River. (n. 41).

3. V. *Nuttallii,* Ph. Hook. Fl. Bor. Am. 1. p. 9. t. 26. Torr. and Gr. Am. v. 1. p. 141. V. aurea, *Nutt. in Hook. Herb.*

HAB. Open pine woods, borders of the high table-land, prairies of the Nez Percez, in fertile grassy plains: rare. June. (n. 407).

4. V. *rotundifolia* ? Mx. Hook. Fl. Bor. Am. 1. p. 177. Torr. and Gr. Am. v. 1. p. 138. V. orbiculata, *Geyer, MSS.*

HAB. In deep dark shady and dry woods of *Thuja gigantea,* in the narrow defiles of the Cœur d'Aleine Mountains, with *Linnæa borealis* and *Calypso borealis,* and *Coptis occidentalis:* very rare. (n. 295).—I am by no means sure of this species; the specimens exactly agree in the flowers and foliage with what I possess from Dr. Schweinitz as V. *rotundifolia,* Mx. It also resembles V. *blanda,* Nutt.; the flowers and leaves are large. If it proves distinct, Mr. Geyer's mst. name of V. *orbiculata* should be adopted.

DROSERACEÆ, *DC.*

1. Parnassia *Kotzebuei,* Cham. et Schlecht. Hook. Fl. Bor. Am. 1. p. 82. t. 28. Torr. and Gr. Am. v. 1. p. 149.

HAB. Shady wet places under willows, in fertile meadows and springy grounds: rare; between Platte and Sweet Water River. July. (n. 133).

HYPERICINEÆ, *Juss.*

1. Hypericum *Scouleri,* Hook. Fl. Bor. Am. 1. p. 111. Torr. and Gr. Am. 1. p. 160.—var. fol. angustioribus.

HAB. Rocky places about springs and along borders of rivers, and in the open plains of Upper Oregon, growing with *Eriogonum umbellatum;* July. Sept. (n. 196); and very wet places, valley of Kooskooskee. June. (n. 501).

CARYOPHYLLEÆ, Juss.

1. Arenaria *congesta,* Nutt. in Torr. et Gr. Am. 1. p. 178.—and *β. var.* major.

HAB. Gravelly banks of Horse River of the Upper Platte (n. 26); and *var. major,* stony Islands of Kooskooskee River: rare. July. (n. 466).—The *var. major* is twice or thrice the usual size of the plant, but does not appear otherwise different.

2. A. *Hookeri,* Nutt. in Torr. et Gr. Am. 1. p. 178.

HAB. High stony plateaux of Upper Sweet Water River, with *Phlox* "*muscoides.*" July. (n. 143).

1. Stellaria *borealis,* Bigelow, Hook. Fl. Bor. Am. 1. p. 94. Torr. and Gr. Am. 1. p. 185. Spergulastrum lanceolatum, *Mich.* Micropetalon lanceolatum, *Pers.—var.* minor.

HAB. Springs in the Spokan plains, September, (n. 532); and *var.* minor, springy places in the desert between Upper Platte and Sweet Water Rivers. July. (n. 36). What is here called *var.* minor of this most variable plant, has the leaves narrower than in *α.* and more obtuse, but except in size, is not otherwise different.

2. S. *nitida,* Hook. in App. Scoresby Greenl. p. 411. S. *Edwardsii,* Hook. Fl. Bor. Am. 1. p. 96. t. 31.

HAB. Open stony slopes of mountains, Upper Oregon, Apr. May, very abundant. (n. 629).—This is the S. *nitida,* nob. in Scoresby; and is a slenderer plant than *S. Edwardsii,* with which I united it in the Flora Boreali-Americana;

while these two, again, Torrey and Gray have considered mere varieties of *S. longipes*, Goldie. It seems utterly impossible to define the limits of this group of *Stellariæ*.

3. S. *longipes*, Goldie, in Hook. Flor. Bor. Am. 1 p. 95.—ε. Torr. and Gr. Am. 1. p. 185.

1. In Mr. Geyer's MS. catalogue is a "*Stellaria phlogioides*," Geyer, n. 144; which does not appear in my collection.

Hab. Borders of woods, gravelly prairies of the Cœur d'Aleine, creeping in dry sand. May. (n. 324). Petals short, sometimes wanting.

1. Cerastium *arvense*, L. (C. Pennsylvanicum, and C. tenuifolium, and C. elongatum, *Ph.*, according to Torrey and Grey).

Hab. Stony meadows of Kanzas River, also found at the Kooskooskee, May. (n. 284).

1. Silene *Drummondii*, Hook. Fl. Bor. Am. 1. p. 89. Torr. et Gr. 1. p. 191.

Hab. Pine woods of Upper Columbia, growing with *Collomia elegans*, and *Clarkia pulchella*, (n. 519, in flower); and in meadows about springs, near Sweet Water River, July. (n. 79).

2. S. *Antirrhina*, L.

Hab. Banks and sterile stony places; Kooskooskee River, May. (n. 385).

3. S. *Menziesii*, Hook. Fl. Bor. Am. 1. p. 99. t. 30. Torr. et Gr. Am. 1. p. 193.—β. Leaves narrower, less downy.

Hab. Burnt places in pine woods, Upper Columbia River. July, (n. 550); and β. (in fruit), sandy moist pine woods at Flathead River, also on the "Black Hills" near Fort Laramie, Upper Platte. (n. 549).

LINEÆ, *DC.*

1. Linum *rigidum*, Ph. Hook. Fl. Bor. Am. 1. p. 105. Torr. et Gr. 1. p. 204.

Hab. Generally seen on the high plains of the Platte River, below the junction of the Forks, growing with *Lupinus pusillus*; corolla ochreous yellow. (n. 169).—I cannot distinguish this from L. *rigidum*.

GERANIACEÆ, *DC.*

1. Erodium *cicutarium*, L'Hérit.

HAB. In the range of the Nez Percez Indians. (n. 670).

1. Geranium *maculatum*, L. Hook. Fl. Bor. Am. p. 115. Torr. et Gr. 1. p. 206.

HAB. Dry stony thickets and ravines, common upon Upper Missouri and Oregon territories. Corolla white to crimson; 2 feet high, bushy. (n. 402).

TEREBINTHACEÆ, *DC.*

1. Rhus *Toxicodendron*, L.

HAB. Shady rocky narrow woods and groves of *Rhus glabrum*, along the banks of the Kooskooskee river. Never rooting. (n. 560).

MALVACEÆ, *Juss.*

1. Malva *rivularis*, Dougl. in Hook. Fl. Bor. Am. 1. p. 107. Torr. et Gr. Am. 1. p. 226.

HAB. Thickets of Upper Columbia, and on Kooskooskee; 3 to 10 feet high: very rare. June, July. (n. 410).

2. M. *Papaver*, Cav. Torr. et Gr. Am. 1. p. 226. Nuttallia Papaver, *Graham, in Hook. Bot. Mag.* t. 3287. Nuttallia cordifolia, *Nutt. in Journ. Acad. Philad.* 7. p. 98.

HAB. Limestone rocks, valley of Blue and Vermillion Rivers, between Kanzas and Platte Rivers; May. (n. 262). This is precisely the M. *Papaver* of Cavanilles, and is perhaps the most northern locality of the species.

3. M. *pedata*, Torr. et Gr. Am. 1. p. 227. Nuttallia pedata, *Nutt. in Hook. Ex. Bot.* 2. p. 62. N. digitata, *Bart. Fl. Am. Sept.* v. 2. p. 62. (non *Nutt.*)—β. umbellata, *Torr. et Gr. l. c.*

Hab. β. In a meadow of the Lower Platte River, not seen afterwards; May. Flowers milk-white (in these specimens). (n. 76). Of this species or variety the root is said to be eaten.

1. Sida *malvæflora,* DC. Lindl. Bot. Reg. t. 1036 (excellent). Hook. Fl. Bor. Am. 1. p. 108. Torr. et Gr. Am. 1. p. 234. Var. 1. Floribus roseo-purpureis. Var. 2. Floribus puniceis ("deep red.")

Hab. *Var.* 1. Grassy fertile borders of rivulets in the high plains of the Spokan and Nez Percez Indians. (n. 404). *Var.* 2. Rocky ravines of Muddy River, near Smith's Fork of the Colorado: the only specimen found. (n. 82). The latter differs in no respect from the former, save in the deeper and redder colour of the flower.

2. Sida *coccinea,* DC. Hook. Fl. Bor. Am. 1. p. 108. Torr. et Gr. 1. p. 235. Malva coccinea, *Nutt. Gen. Am.* 2. p. 81. *Sims, Bot. Mag.* t. 1673.

Hab. Fertile elevated plains, Lower Platte, growing with *Gaura coccinea, Pentstemon "albidus,"* and *Batschia "decumbens."* June. (n. 174).

3. Sida *dissecta,* Nutt. in Torr. et Gr. 1. p. 235.

Hab. Gravelly slopes of calcareous hills, Black's Fork of the Upper Colorado. (n. 98).—This seems gradually to pass into S. *coccinea.*

Acerineæ, *Juss.*

1. Acer *Douglasii,* nov. sp.; foliis cordato-rotundatis membranaceis obtusiusculis 5-lobis brevissime acuminatis grosse inciso-serratis glabris 3-5-nerviis subtus pallidioribus, racemis laxis umbellatis 4-8 floris basi (foliisque novellis) longe bracteatis, bracteis ovato-lanceolatis coloratis intus pubescentibus, calycibus petalisque linearibus glaberrimis, fructibus umbellatis erecto-patentibus alis subfalcatis obtusis. (Tab. VI).

Acer barbatum, *Dougl. in Hook. Fl. Bor. Am.* 1. *p.* 112. (*var. Mx.*)

Hab. Near springs of the Rocky Mountains about the sources of the Columbia, *Douglas*, *Drummond*. Blue Mountains of Oregon, *Douglas*. Banks of streams, Upper Oregon, 10—20 feet high, very often shrubby; more elevated in the lower regions, *Geyer*. (n. 616).—My first specimens of this, both from Douglas and Drummond, being only young flowering branches, I was unable to give an opinion respecting the species. Since the publication of the Flora Boreali-Americana, I have received good fructified specimens, gathered during poor Douglas' last journey in the Blue Mountains; and now I possess flowering and fruiting specimens from Mr. Geyer, all of which clearly prove this to be a new and most distinct species, totally unlike A. *grandidentatum* of Nuttall, to which Messrs. Torrey and Gray have, with slight doubts however, referred it. Our figure will, we trust, satisfactorily show the characters of this species, which has a good deal the flowers of A. *circinnatum*, while its leaves more resemble those of A. *rubrum*: but it is in other respects very different from both.

Tab. VI. Fig. 1. Flower, *magn.*

Celastrineæ, *Br.*

1. Oreophila *myrtifolia*, Nutt. in Torr. et Gr. Am. 1. p. 259. Myginda myrtifolia, *Nutt. Gen. Am.* 1. *p.* 109. *Hook. Fl. Bor. Am.* 1. p. 120. t. 41.

Hab. My specimen and the habitat are mislaid. The specimen was probably from the Rocky Mountains of the Oregon (n. 331. on the authority of Mr. Geyer's list.)

Rhamneæ, *Juss.*

1. Rhamnus *Purshianus*, DC. Hook. Fl. Bor. Am. 1. p. 123. t. 43. Torr. et Gr. Am. 1. p. 262. R. alnifolius, *Ph.* (*non L'Hérit.*)

Hab. Rocks and water-courses in the plains, Spokan River and Cœur d'Aleine country. A small tree or shrub, 8—12 feet high. June. (n. 522).

1. Ceanothus *Oreganus*, Nutt. in Torr. et Gr. Am. 1. p. 265. C. sanguineus, *Hook. Fl. Bor. Am.* 1. p. 125. (*non Ph.*)

HAB. Mountains, Upper Oregon, 2—10 feet high. Outline of the bush globose, outer stems rooting. Leaves biennial. Young leaves, after they attain their full size, are shining and covered on the upper surface with a glutinous colourless substance. Flowers white. Grows with *Spiræa ariæfolia*, June. (n. 526).

(*To be continued*).

Journal of the Voyage to the NIGER *of* DR. J. R. T. VOGEL.

(*Continued from Vol. V. p.* 644.)

Thursday, 5th of August.—We left Accra after midnight, and cast anchor on Sunday, the 9th, at the mouth of a river, supposed to be the Nun. The weather was gloomy, and a dense rain falling all day, caused the wet to make its way through the shutters, so that it was difficult to find a dry place, even for standing room. We stayed there the whole day, and sailed next morning for the mouth of the Nun, anchoring about nine miles off it, alongside the Albert.

Friday the 13*th of August.*—The want of water, already felt the day before, was now more severely experienced, although we had collected some rain on Monday. How such an Expedition came to be unprovided with water, especially when we consider that, on no account, ought we have made use at first of the Niger water, is incomprehensible to me. It had been easy to obtain abundance of good water at Danish Accra. . . . .

Sunday, August 15.—We quitted our anchorage at half past eleven, A.M., and crossed without difficulty the bar, beyond which we cast anchor beside the Albert, at about a quarter to two, P.M. Here we stopped four days, during which I could only examine the right bank of the river, because I had no boat to get to the opposite side, where the greater extent of land and a village seemed to offer more interest. The river is here perhaps 10,000 yards wide, and the stream carries down a great deal of sand. The tide showed itself very distinctly, running perhaps three or four knots an hour, and the current seeming to set more on the left shore, which appears to be a mere sandbank, or sandy foreland, than on the right, which is covered with jungle, immediately beyond the sandy strand. The mouth of the Nun looks like a Delta, on a small scale; at least now, during the rainy season; being intersected by many shallow watercourses, forming, further on, low lands covered with *Mangroves*, similar to what I observed at Bassa Cove (Grand Bassa). The *Avicennia* appeared to prove, that the one hitherto seen, with quite naked leaves (A. *nitida ?*) at Grand Bassa, is but a variety of that at Sierra Leone. In these Mangrove swamps, the *Oil palm* often grew, covered with parasitical Ferns, (I found only two species of Ferns besides those, which are terrestrial), and on somewhat higher ground, *Drepanocarpus lunatus*, *Ormocarpus verrucosus*, a few shrubby *Rubiaceæ*, and a few *Mimoseæ*. Of the trees, intermixed with the Mangroves, little can be said; they were not many, and all covered, to the very top, with parasites. Some belonged to the genus *Bombax*. This land, if it can be so called, was but a few feet above high-water mark, and consisted of sea-sand and vegetable remains. The beach was quite flat, hardly higher than the sea, covered in many places with water, and formed of sand, mixed with mica, probably carried down by the Niger, and giving its shores a shining and peculiar appearance. In some places, the strand is clothed with jungle close to the sea, consisting of *Chrysobalanus Icaco* and *Ecastophyllum Brownei*; the fruits of the former, of a beautiful red, were very conspicuous. Intermingled with these grew *Melastomaceæ*, *Diodia maritima*, Th., some other small *Rubiaceæ*, and *Scoparia dulcis*; while the border, towards the higher woods, was frequently ornamented with the beautiful yellow flowers of *Hibiscus tiliaceus*. Amongst these shrubs, spots might be seen, here and there, covered with tall rough Grass and *Cyperaceæ*, to the height of a man, and higher; bound together by *Convolvuli*, *Cassytha*, and other *Lianes*, rendering them perfectly impenetrable. I found several places closely matted with *Stylosanthes Guineensis*, forming carpets, upon which one might cross pools without observing them. The most barren and sandy places were much overgrown with a *Teleianthera*, R. Br., (*Illecebrum obliquum*, Schum.?) an *Euphorbia* (*trinervia*, Schum.?) but especially with a yellow-flowered creeping *Dolichos* and *Convolvulus Pes Capræ*, (*rotundifol.* Schum.), which latter is diffused over the whole coast from Monrovia. An *Umbellifera* (*Hydrocotyle interrupta*, *β. platyph.* DC.), grew every where on the beach amongst the Mangroves, and seems to overspread the whole coast. A species of *Malaghetty Pepper*, differing from that in Grand Bassa by the long beak of the fruit, was frequent. On one spot, amongst the Mangroves, I noticed, on the decaying roots, a delicate white plant, having white scales instead of leaves, and three flowers; it was a parasite on the roots, but sent forth roots of its own. I have preserved a few specimens in spirits. Upon the whole, I have seen too little of the vegetation here, to compare it with that of any place hitherto visited on the coast. On the opposite shore, they cultivate *Cocoa Palms*, of which the natives brought us the nuts; on the right bank, where we did not now see any inhabitants, the *Cassada* showed traces of abandoned plantations. The scenery is not remarkable. At the entrance, the left side presented a pleasant prospect, from the familiar forms of the forest and *Cocoa Palm*; on the opposite shore, beyond the forest and brushwood, there appeared a sort of lagoon, while behind that, the Mangroves rose into an erect and lofty-stemmed wood.

Of the natives, I saw only few, and none very near. They seemed to be well-formed, robust men, with their hair frequently shorn in a crest shape, but having nothing particular in their dress. I was told that they have a language of their own (Bassa language). The weather was changeable, alternate rain and sunshine; the former moderate and the heat never oppressive. By day and night, but especially during the day, a fresh sea-breeze prevailed.

Friday, August 20.—At break of day, we proceeded up the river, and although it rained violently, every one was in high spirits at our at last moving onwards, and beginning, after so much detention, the Expedition itself. A little above the bar, the river, dividing into creeks and branches, is very wide, resembling a lake; but the only branch deep enough for the steamers, at present known to unite with the upper part, called "Louis Creek," is narrow in proportion, at one part only sixty to eighty English yards wide. So far, the shore is covered with Mangrove (*Rhizophora*), which, with its roots descending from the branches, has a singular appearance; but this is only the case with old trees, for the young Mangroves often form woods of dense foliage, now in the full splendour of green leaves—a glorious sight! Only in a few places, I saw *Ferns* spring out of the water amongst the Mangroves. A little beyond Louis Creek, the character of the vegetation underwent a marked change; although the country was still much covered with Mangroves, they receded to the back-ground, and the stream itself was lined with young, still bushy, *Oil Palms : Pandanus Candelabrum* showed, not seldom, its grass-like leaves; while, here and there, other trees mixed with them, until, near Sunday Island,* (about thirteen English miles from the sea), the *Mangroves* and *Pandanus* disappear. Then the shore was lined with small trees and shrubs, with fresh glossy foliage, backed by the tall and elegant forms of fully grown *Oil palms*, a view which can never tire our sight. These Palms are 60-80 feet high. The stems are thickest in the middle; but the contraction towards the bottom is hardly perceptible. The top is rounded. The leaves are long, their tips somewhat pendent; the lower leaves more so, which causes the cylindrical shape.

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* The influence of the tide extends only as far as "Sunday Island."—(H. D. Trotter.)

Hitherto we had met few natives; but they now began to show themselves, more and more numerous, in their small canoes. Their thatched huts, close to the river, were surrounded by plantations of *Pisang*, descending apparently into the water. I saw occasionally *Bombax* trees, or *Leguminosæ* and *Mimoseæ*, easily distinguishable by their peculiar foliage, and some other trees, which might have been taken for species of *Ficus*. The trees increased in number, and towards evening, we passed shores covered with tall *Reeds*, beyond which thick forests extended; but under no circumstances was there a deficiency of *Oil Palms*. Alternating with reeds, we observed plantations of *Pisang* and *Sugar-cane*, completely in water, close to small villages which became very numerous. After sunset, we anchored in the midst of the stream. From Alburka Island we reckon to have made thirty-five English miles, (or forty from the sea.)

Saturday, *August* 21.—We proceeded, the three ships in company, at day-break. The vegetation resembled, on the whole, what we had seen yesterday; the trees often descending close to the water, and exhibiting a mass of parasites of most singular forms. Sometimes I saw flowers, and fruit, which only made me regret, that I could not examine them closer. In Madeira I botanized on horseback, at Cape Coast Castle out of a carriage, and at Accra in a basket; but from a steam ship it was impracticable. The villages became very frequent; in the plantations we saw (through the telescope) besides *Pisang* and *Sugar*, occasionally *Cassada*, *Maize* and *Yam*; to which may be added the *Oil palm* and the *Cocoa*, similar to the latter, but (here at least) not so slender, being rather short and of vigorous growth. But whilst the *Oil palm* grew every where, the *Cocoa* showed itself only near villages; a sure proof of its not being indigenous. Soon after noon, an attempt was made to proceed by another than the usual branch of the river, round an island; but we found that it did not speedily join the main stream, and we were separated from the other vessels, which had taken the eastern branch. After sunset we anchored; having come about thirty-six miles. Soon after entering the western branch, we perceived on the right shore a village of clay cottages, from whence a chief came off to us; the village was called Otuo. The men in the canoes were a robust race, and, like others who visited us in the course of the day, had a line or mark drawn over the forehead down to the nose. Their clothes showed nothing remarkable; but the hair of some was divided into squares, like a chess-board; while others wore it plaited, in numerous little tails, which stood erect on the head like so many horns. They spoke the Bassa language. The shore was generally very low, rising but little above the river, at the most elevated part perhaps 4 feet; while the bared roots of plants made me think that the water is sometimes higher than at this time.

Sunday, August 22.—Proceeding at break of day, we soon perceived on the left side a town; the first we had yet seen, situated on an elevation of 6 to 10 feet above the river, and containing clay cottages, each with a covered court-yard; while higher up were some magazines or warehouses. I saw here no *Cocoa palms*, but in the course of the day a few single ones occurred. The natives, who assembled on the shore, to the number of several hundreds, it was fancied, mentioned the name of the town as "Amasuma" and that of the river as "Oguberri." Further on we came to two equally wide branches of the river, with equally strong currents, joining together; after some consideration, the easternmost was chosen, and at two o'clock we arrived at a similar place, but where the western channel was very narrow. We proceeded a short way upwards, and Captain Allen caused two plants to be fetched by the boat, which was towing. One is probably a new *Dalbergia*, and one a Creeper, which I had watched eagerly ever since "Sunday Island." It climbs up the trees along the shore, to their very summits, and then drops many thread-like stalks, 6 feet long, covered at the top with bundles of yellow flowers, which often reach the ground. It appears a new genus, closely allied to *Mucuna*, and I call it provisionally *Mucuna flagellipes.* Both plants were unfortunately without fruit. Returning down this branch, we saw, close to the fork on the left side, a village, the name of which we understood to be Haddi, i. e. *small box*. Towards sunset, we arrived again at the eastern or main branch, left on Saturday, which is, at the place of separation, a river of 3 to 4000 feet wide; its shores are elevated some feet and covered with reeds and shrubs; on the left bank, immediately opposite to the fork, stands a village, or rather three small ones, somewhat apart and consisting of clay huts, and magazines, raised on posts. The name of the last of the three sounded like "Obokriga." Not far beyond this we anchored, when it got dark. The general character of the country was the same as yesterday, but the shores being somewhat higher, I was able generally to see the soil, though frequently the shrubs and plants were immersed up to their lower leaves. The vegetation appeared the same as before.

Monday, August 23.—Again in movement at break of day. On the shore, which was lower than on the previous day, we noticed a few villages, and some negroes came alongside in canoes and on board. They wore not only the streak down the forehead, but mostly three parallel lines on each cheek-bone. Towards ten o'clock we arrived at a village on the right shore, named in Laird's expedition "Ibu," and "Little Ibu" in Allen's chart;* the inhabitants called it Ocrotombi or Korotumbi; but it was some time, before we could clearly hear the name. The chief, who came on board, wore an old blue European jacket, and a perfectly new green cap, with tassel strings. It had rained in the morning; towards noon the weather cleared, and a boat going on shore to take the sun's meridian, I joined it, and we landed at a plantation, where the ground, about 4 or 5 feet above the level of the water, consisted of good vegetable soil, mixed with clay and sand, and cultivated with *Cocoa trees, Yams,* and *Capsicum. Sorghum* (*rubrum* ?) grew apparently indigenous, and formed grassy forests, 10 or 11 feet high. The geographical latitude was found to be 5° 14′ N. The spot was a little lower down than that called Ofitulo on Allen's map. Towards 10 o'clock we approached Stirling's Island, and on account of the violent rain, we cast anchor there for a short time; the rain felt very cold (refer to my Meteorol. Journal). We proceeded about three o'clock; the rain continuing till night, with variable violence. Shortly before dark we passed a place on the right shore, called, according to Mr. Brown, "Ingliana." Near it I noticed an extensive plantation of *Bananas,* and soon after this, we cast anchor. The borders of the rivers were every where covered with forests, reaching to the water's edge, or with intervening high grass, (*Sorghum saccharinum* ?) Amongst these, there were frequently places cleared for plantations, or they might be natural open spots in the forests, where high trees would stand singly. A great inconvenience and misfortune it is that we are obliged to drink such bad water; it has not only a dirty colour, but owing to its being saturated with decomposed vegetable and animal matter, a sickening taste, which, though somewhat lessened, is not removed by filtration.

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* Lieut. Allen's chart of the River Niger or Quorra, published by Bate, in the Poultry, London.—Lieut. William Allen, who surveyed the river in 1832—3, in the Alburka steamer, under Messrs. Lander and Laird, was second in command on the Niger Expedition, and Commander of H.M. Ship Wilberforce, the steamer in which Dr. Vogel ascended the river.—(H. D. Trotter).

Tuesday, August 24.—At eight o'clock we passed so near the shore, that I could botanize, and I observed the blossoms of a high tree (*Mimosa*) and of a climber, a *Tetracera,* perhaps not different from *T. Senegalensis* (*obovata ?*) Towards ten o'clock we came to the Benin (Warree) branch. On the point of land, between the two arms of the river, a signal-post was erected, and this gave me the opportunity of visiting the shore for a few minutes, and I found it covered with the *Sorghum,* previously noticed. An *Æschynomene, Cassia mimosoides* and a *Malvacea,* were all I could pick up in the hurry. Though, from on board ship, the shore had appeared swampy, it proved firm to the water's edge, and I am inclined to believe that spots, looking marshy at a distance, are not really so. Perhaps some swamps may be formed in dry weather by the receding of the waters; but since our quitting the Mangrove country, I have not observed any absolute morasses; on the contrary, the land appears every where to rise 2 or 3 feet above the water, though what are now creeks may become swamps in the dry season. We descended the Benin (Warree)* branch for a few miles; it nowise differs from the main river, except that the stream is somewhat narrower. By four o'clock we returned to the point of junction, and during our short stay, a great many canoes assembled about us. Some were large and carried twelve or sixteen persons, others fewer, and some had only one in them. The canoes are the same as before, with a high and broad stern. One man stood steering with a paddle. There were perhaps sixteen canoes, containing about one hundred and ten people, who had come mostly from Obiah, on the right shore of the river. Their dress had nothing very peculiar. The main difference consisted in the various coral and pearl strings, or ivory and brass rings, which they wore on arms and legs, and in the manner of dressing the hair. The latter struck us particularly, now that so many individuals had collected, and we could look down on their heads, from the deck of our ship. Some had cut their hair so round and formally, that it bore the most deceptive semblance to a wig; some shaved their heads quite bald; while others only kept a portion of hair behind, or a large portion forming a narrow ridge across, or it was allowed to grow high in the middle of the head, like a small steeple. Some whimsical fellows exhibited merely a narrow strip of hair from behind to the front, looking like the crest of a helmet, or perhaps an oblong square, or it was cut in chequers, and the remaining portion twisted into numbers of little tails, while others wore their hair like our European dandies, arranged in various ways on the sides of the head.

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* The branch is erroneously called the Benin branch in Allen's chart. It leads to Warree or Warri, and ought therefore to be called the Warree branch.—(H. D. Trotter).

The river,* at the separation of the Benin (Warree) branch, is about a mile wide; the commencement of this branch measured 696 yards. At 5 o'clock we quitted the Benin (Warree) branch, returning into the main stream, which has here a lake-like appearance, surrounded with high trees; many of the canoes followed, spreading over the water, and greatly enlivening the scene by zealously rowing to keep up with us. Towards sunset we cast anchor. The weather was very cheerless, being generally rainy, except at noon.

Wednesday, *August* 25.—Proceeded at the usual time. Much rain and therefore several stoppages. At noon we reached a place, marked on Allen's map, Egaboh, but now called "Ulok." The sun showing itself, and an attempt to make observations following, I was enabled to land for a short time. The grass along the shore was not a *Sorghum*, but some other genus. Close to the water-side grew a fig-tree, with very small fruit. The neighbouring chief, an old leprous man, came on board; he wore a drummer's jacket given him at the time of Laird's expedition (he seemed to have taken great care of it) and carried an iron staff divided at the top and ornamented with brass rings. After some detention, occasioned by heavy rains, we pursued our course, the stream being generally about half a mile wide, and the vegetation the same as heretofore. Approaching the creek that leads to Ibu (Abòh)* the current proved so strong, that we could hardly make way against it; on the preceding day it had only been one and a half or two knots an hour. Towards half past seven we cast anchor at the Ibu (Abòh) creek; abreast of the creek leading to the town of Abòh.

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* The branch which here separates from the Nun or main branch of the Delta of the Niger, runs to the sea by the town of Warree or Warri, falling into the Bight of Benin to the north-west of the mouth of the Nun river. Captain Becroft of the Ethiope, Mr. Jamieson's steamer, was the first to ascend the Niger by this branch, in 1840. Lieutenant Allen had previously conjectured it to be the Benin river, with which, however, there is only a communication by creeks. This accounts for Dr. Vogel calling it the Benin branch in his Journal.

Above the separation of these two branches, the river may be properly called the Niger, the name by which it has been so long known in the civilized world. The natives have no name for the river, excepting the general appellation of "Water," which varies with the different languages spoken on the banks. Mungo Park found it called "Joliba" in the higher parts of the river. In the Houssa country it is called "Quorra."—(H. D. Trotter).

Thursday, August 26.—Early in the morning, the Captain and myself rowed about in the Ibu (Abòh) creek, and collected a few plants. This creek, at present very wide, is without a current; the main channel measures perhaps 100 yards. The right shore is now inundated, the shrubs being altogether covered with water, the grasses immersed to their ears, on which snails, ants and small beetles had settled, by way of refuge, in great numbers. We had taken on board, on the previous day, a man who wanted to go as pilot to Abòh; he seemed to be a careful and clever person. Granby, our interpreter "for Brass and Ibo," recognised him as an old acquaintance, he (Granby) having lived here a long while before being sold to the Europeans. The Ibo man was rejoiced to see him again, and expressed his astonishment, that a man sold to the Europeans should return, it being the general opinion that such slaves were used for food!

Large canoes were fastened in the jungle; they had come from the Brass country, chiefly to purchase palm oil, for which purpose, large casks lay on board, under roofs of matting. Abòh is on the opposite side of the shore, here intersected by several small creeks; otherwise it is covered to the water's edge with brushwood, behind which are the huts. I gathered on this occasion a few *Mimoseæ*, *Sapindaceæ*, and *Rubiaceæ*, but the most interesting was a shrub (*Polyand. Pentag.* fruct. placentis 5 parietalibus) apparently a new genus of *Bixaceæ*. In the main stream, and even in the smaller creeks was a *Pistia*, perhaps *Pistia Stratiotes*; it does not, however, seem to grow here, but to float down the Niger, where it may be seen drifting in large masses. Some specimens were in flower; fruit I could not discover. In the morning we had a visit from King Obi's son; towards noon he came himself, with a lot of noisy followers, and henceforth we were constantly surrounded by many canoes. These people wear either a piece of cloth round the loins, or portions of European dresses; only King Obi had both coat and trowsers. Obi is between fifty and sixty, with a true Negro face, but cunning. The son is a finely formed, strong, powerful young man. King Obi brought with him one of his wives, a very young person, and a daughter, dressed in African style, i. e. *sans géne*. When this was observed, Commissioner Cook gave to the wife a red, and Captain Allen to the daughter, a coloured gown; but the latter was not pleased with hers. One might mention several peculiarities about their attire; but such things, and their smoking pipes, etc., did not particularly interest me. Several women wore enormous ivory rings round the legs. The account I have before given of the various ways of dressing their hair might be extended. The desire to possess whatever they saw, was unequivocal; but I heard of no thefts. There were a good many tools scattered about on deck, which in the confusion might easily have been taken. The weather was rainy and very uncomfortable.

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* Schön says the proper name of this town is not Ibu, but "Abòh." The town had hitherto been called by Europeans "Ibo" or "Eboe," and was generally supposed to be the capital of the whole of the Ibo country; but we ascertained that its proper name is "Abòh," and that it is the principal town of the territory of the same name, which forms a part only, and that probably the most western, of the Ibo country. (H. D. Trotter).—See Captain Trotter's Report to Lord Stanley; Parliamentary Papers relating to the Niger Expedition, p. 91.

Friday, August 27.—Through incessant rains the ground got swampy, in fact so muddy, that it became impossible to make any extensive excursions. Besides some plants previously mentioned, I collected *Cucurbitaceæ*, *Apocyneæ*, a *Ficus* and a species of *Malaghetty pepper*, which, judging by the leaves and fruit, is identical with that at the mouth of the Nun River; a fine *Costus* was very common; a *Salvinia*, not rare in the creeks, and a *Ceratophyllum*, which I had seen before in Abòh creek. On the stems of trees grew three species of *Mosses*; on the ground none. Whoever may have the good fortune to investigate these creeks in a boat, would probably find many *Cryptogamiæ*, new to the African Flora.

Saturday, August 28.—I had yesterday seen a tree, about thirty feet distant from the water's edge, of moderate height, with three long straight branches, closely appressed at the top, and bearing a corymb of rose-coloured blossoms, rising from the terminal cluster of leaves. Having noticed this object through the telescope from the deck, I of course wished to obtain the flower, and landing, I asked two negroes (from Sierra Leone) who accompanied me, whether they would procure it; but they both declared it impracticable, because of the high grass. I therefore cut a way with my knife; but on reaching the tree, I found it too lofty for me to get to the top without loss of time, the period for which the boat was lent me having expired. To-day, I succeeded again in obtaining the boat for a short while, and I found fortunately one amongst the negroes who climbed the tree, about 16 feet high, and gathered a few branches with an iron hook. I record this circumstance here intentionally, as an instance of my nearly daily difficulties. Amongst the few plants which I collected, there were many that occur along the whole coast; as, for instance, *Sarcocephalus*. According to what Mr. Schön told me, the name of this place, which I had considered to be Ibu, is Abòh. In the afternoon we left Ibu (Abòh,) and steamed it by moonlight till eleven o'clock, when we cast anchor. Sunday, 29th, we did not move. Weather very bad.

Monday, August 30.—Started by daybreak. Neither the country nor the river offered any thing new.

Tuesday, August 31.—I had twice an opportunity of visiting the shore for a short while. The first time, I found a terrestrial *Orchidea*, 4 feet high; a great part of the jungle on the right shore consisted of a *Fig-tree*, with long branchlets, covered with fructification shooting out from the old wood, its white bark was visible at a great distance. The ants were here dreadfully troublesome. At two o'clock, when passing an island, we perceived a strong very sweet smell, (almost like the *Tetracera* which I had collected on the 24th), but I could not descry any flowers through the telescope. In the afternoon we saw, at a distance, on the left shore, the first low hills, and soon afterwards a watercourse on the same side, apparently quite still, for the current of the Niger ran in a sharply distinct line athwart it. This part, including the hills and river, is said to be called "Oredtha;" it is opposite Kirro market, (so-named in Allen's chart.) In this branch of the river grew many *Pistiæ;* but higher up the Niger, we also met them floating in large quantities. This plant appears to have been displaced, by rising waters, from its tranquil domicile, as is frequently the case with others; for we pass many small floating islands of grass and other plants, clumps of rolled-up grass, and stems of huge trees, appearing in the distance, with their roots and branches partly emerging from the water, exactly like canoes. The river, since we left Ibu, (Abòh), continues about half-a-mile in width, sometimes more; the water very muddy, and of a clay colour; the shores low, covered with brushwood, intertwined with so many creepers as to form, sometimes for great distances, a vegetable wall. This wall was particularly remarkable on the left side of the said still water; behind it rose a few hillocks, with much cultivation, (*Sorghum vulgare ?*) amongst which single trees were interspersed. A peculiar feature of this part consists in the small huts raised on poles along the shore, from which the natives, according to Brown, drop their fishing-lines into the river.

Wednesday, September 1.—This morning the river was very wide, in one part above a mile, and covered with *Pistiæ.*

There were hills, especially on the left side, but they ceased before we reached Damugu.* Of this place we only discerned a few huts, the first round ones, with a pointed overhanging grass roof. On the whole we saw to-day but few villages; if there are more, they must lie beyond the jungle. Nor did we observe any Cocoa palms, which had occurred in several places on the previous day. About Damugu, the country seems covered with high forests; hitherto, there had been only low woods. Towards evening, we saw isolated high trees, apparently covered with blossoms; but through the telescope we descried these fancied flowers to be white birds, (*Egrets?*) of which several stalked, here and there, along the shore.

Thursday, September 2. — Beyond Damugu, the land appears again lower and covered with jungle. I think that the shores of the main river are mostly lined with forests, and the islands covered with grass and underwood. Towards noon we came to finely wooded hills, and in the evening, King William's Mountain appeared, (see Allen's chart.) I had twice the opportunity of going for a short time on shore. First to an open place, covered with grass, where I found *Cassia Absus, mimosoides?* a *Psoralea,* some *Gramineæ, Malvaceæ* and *Schmideleæ;* a *Sarcocephalus* grew likewise here. The second time was near a village, where the cottages are round, and plaited of palm-leaves and grass. Storehouses, raised on poles, are filled with *Indian corn.* A *Tephrosia* (*toxicaria*), almost arborescent, was planted about the huts, which a Krooman told me, was used to benumb the fish. A fine red flower, on a high tree, could not be procured; it appeared to be Beauvois' *Spathodea,* and I fancied I had seen it several times in the Delta.

Friday, September 3.—We can quite overlook the country from on board our vessel. On both sides, the river is margined at some distance with hills; further off, towards the north, rise mountains, enveloped with blue mist. Only on the left side, the hills approach the shore, and are, for the space of about a quarter of a mile, quite abrupt to about 100 feet high, of red sandstone, visible, because of its bright colour, at a great distance. The top is often covered with overhanging vegetation. On this hill stands the town of Attah*, (Iddah), surrounded by cultivated grounds. In the distance grow *Cocoa palms* and *Baobab trees*, the latter bearing long pendent fruit. This morning I had another opportunity of going on shore. The ground in front of the hill, and down the river, is now quite covered with water. Some way up, I found a *Baobab tree*, apparently consisting of several stems joined; it was by no means low, perhaps 30 feet high to the branches, and altogether 70 to 80 feet high. The fruit is remarkable, suspended from stalks 1½ foot long, but I could only collect a few specimens, being obliged to return. We moved to the right shore, where the "Soudan" already was, to cut fire-wood, the "Albert" remaining behind, and lay close to the shore, of which a considerable breadth was inundated. In the afternoon, a number of natives came to see what we were doing; especially, (as they said), because the people of the Attah sometimes come here to make slaves. They appeared never yet to have been in contact with Europeans; they wore the country cloth round their loins, and were armed with bows and arrows, the latter with only wooden points. The quivers seemed to be formed of goatskins. Their town is said to be five miles inland, and is called "Waápa." The country is called *Angori*, and is under the chief of this town.

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* Or Addá-Mugu.—(H. D. Trotter.)

According to one of our free negroes, a native of these parts, this district belongs to "Benin Country," which extends to the sea. The "Great King" of it sacrifices daily three human beings. (!) It was singular that none of the Angori people had canoes, although their plantations came down to the edge of the river. One, of Yams (*Dioscorea sativa*) and *Maize*, was situated close to our vessel; amongst these plants grew a few *Tephrosiæ*, which, a "Nufi man" told me, were used in his country for catching fish, and are seen both wild and cultivated. The brushwood near the river consisted chiefly of *Quisqualis obovata*, (Schum.), which, whether bearing white or red flowers, had a beautiful appearance;—and a *Porina*, *Spondias*, *Sarcocephalus*, a few *Oil palms*, *Lonchocarpus formosa*, &c.

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* Attah is the name of the chief, and not of the town; or rather, Attah is the *title* of the chief, who is styled the Attah or King of Egarra, or more generally "the Attah." The town is called *Iddah*. — (H. D. Trotter.

Saturday, September 4.—A trip into the interior showed me that the soil on the hills is much mixed with sand, owing to the decomposed sandstone. I could not get far; the land being chiefly savannahs, the remnants of decayed forests; *Tamarinds*, and other *Leguminosæ*, a *Banisteria*, (?) and *Bombax* were conspicuous, besides other trees, already mentioned. Of herbaceous and shrubby plants I found, amongst the *Cyperaceæ* and *Grasses*, chiefly *Leguminosæ*, *Desmodium*, *Cassia*, *Malvaceæ*, *Euphorbiaceæ*, (*Phyllanthus*, *Tragia*). Near the shore, in water-holes, grew frequently a *Lemna*,* now in flower. A flowering *Loranthus*, with verdigris-coloured fruit, was parasitical on a *Leguminosa*, now almost under water.

The burning sun, which came out after rain, gave me a violent head-ache. Towards evening, we proceeded a few miles up the river, and staid there during Sunday the 5th of September, in company with the other vessels, keeping the Sabbath as a day of rest. The current ran here extremely strong, about three knots and a half per hour.

Monday, September 6.—I felt very unwell, and towards noon slight fever came on, which exhausted me much. In the evening we followed the "Albert" to Iddah, and grounded near the eastern inundated part of English Island. Here we remained till Wednesday, September 8, in the evening, when we succeeded in getting afloat again, and proceeded a few miles upwards.

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* Is it different from L. *minor*, of Europe? The leaves are distinctly striated; which, so far as I recollect, is not the case in our plant.

Thursday, September 9.—Till mid-day I felt unwell and weak, but then got better. We approached the mountains, which proved to consist of small ridges, 1,000 to 2,000 feet high; and the scenery was sometimes very pretty, the mountains being overgrown with trees to the top. The hills, which we passed first, and then the mountains, seemed to form several (more than two?) basins, through which the river had forced its way, as is frequently the case with mountain streams. We proceeded along the eastern branch, to the Bokweh Island. The foremost mountains of King's Peak (so called in Allen's chart) came down to the river, and we could clearly distinguish large strata in the declivity and down to the bottom. At the northern end of the island, a beautiful prospect was suddenly disclosed, upon the mountains on the right shore, from Mount Jervis to Mount Saddleback, (see Allen's chart), contrasting, at the moment we came out of the channel, most distinctly with the horizon, then strongly illuminated by the setting sun. I observed no great change in the vegetation, unless perhaps less grass prevailed on the right shore. We never before saw so many canoes descending the river as to-day; some very large; all had a small scaffolding in the middle, and in some of them were horses, no bigger than donkeys. The current, where we anchored a little above Bokweh Island, was three knots and a half.

Friday, September 10.—To-day we passed the mountains, most of which rise in elongated ridges, but others are isolated, their slopes covered with large boulders, between which is a thick brushwood. The scenery is very pretty; mountains often like those of the Rhine, but castles and vineyards are wanting, and the rivers too wide and full of island and swamps. About noon, we stopped near a small island, beyond Mount Soracle (in Allen's chart), the name of which, according to some natives who came on board, was Dagore. I was again unwell and could not go on shore, but Roscher, who did, found the island of granite formation, and brought me a few plants. Between Mount St. Michael and

Mount Franklin in Allen's chart, stood a village, situated on a partly isolated hill, the first, which I had observed here, built on a considerable elevation; most of the villages being close to the river, so that, because of the unusual rise of water, a portion of the huts are under water. A *Leguminosa* with the habit of *Robinia*, and violet blossoms now in full splendour, struck me; I also saw here and there a *Baobab* with fruit; yesterday I noticed many *Cocoas*, to-day none. Near a village, on the right shore, a little above Maconochie island, grew some *Fan palms*, and we subsequently met with more; before this, I had only seen one in the Delta. We anchored about half-way between Mount Franklin and the confluence of the Niger and Chadda. The current runs two and a half knots.

Saturday, September 11.—Before eight o'clock we cast anchor off Adda-Kuddu, the place which had been preliminarily fixed upon for the model-farm. The river expands here to a lake, while, to the extreme left, the confluence with the Chadda is seen. Mountains above 2000 feet high are visible in every direction at a distance. The landing-place was remarkable for the many boulders, lying one over the other, surrounded and partly overgrown with shrubs and trees. In one conspicuous place I found a *Baobab*, looking much like an old *Oak*. Close by, were several others, one quite denuded, the rest with a little foliage, but all showing their characteristic pendent fruit. Being still poorly, I took Captain Trotter's advice and went on shore. The ruins of Adda-Kuddu surrounded the place, and were already covered with vegetation.

Cylindrical holes, several feet deep, and 2 feet in diameter, and bricked for making dyes, were still visible. The ruins of African towns offer nothing picturesque. We hurried to some spot, from whence we might survey the country. About the town, the habitations of which had been round clay huts, lies a level valley, bounded by low hillocks, which promised the territory best fit for cultivation. To get at it, we had to pass a place, where seemed to have been something like a ditch and wall. The valley itself had evidently been cultivated at one time, but is now covered with *Gramineæ*, *Cyperaceæ*, a few small *Euphorbiæ*, *Malvaceæ*, and particularly *Leguminosæ*, amongst which two *Tephrosiæ*, one 5 or 6 feet high, were the most remarkable plants, rendering our progress very difficult by their woody stalks. The valley was nearly dry, with only a few puddles of rain water, and the ground is pretty well cleared, with here and there a few large pieces of broken rock. The soil consisted of decomposed granite, and if it ever had been mixed with vegetable earth, it is exhausted by former cultivation. Quartz remained abundantly in it, in the shape of coarse sand, and I could not help condemning the soil as extremely indifferent. The inhabitants of Adda-Kuddu, upon their town being destroyed by the Felahtis, removed to the opposite side of the river, and built there the town called "Schimri," (afterwards I heard other names for the new Adda-Kuddu) close to the shore. It is now, by reason of this year's unusually high water, quite inundated, and therefore the people have erected another new city. The chief or governor (or Aneidjo) appointed by the King of Iddah, paid us a visit. His companions wore the Nufi Toba, an under-dress with wide sleeves, reaching to the knuckles. He was decorated with large bells on the wrists, and a slave fanned him with a leathern fan. In the afternoon we proceeded up the Niger, to Stirling Hill, to examine the country; it was difficult to learn at whose disposal it was; but at last we were assured, that an independent tribe, said to be very savage, dwelt on the mountain. I was requested, towards sunset, to examine the soil in the valley, and found it no better, than at Adda-Kuddu. There were plantations of *Maize* and *Yams*. Mr. Carr had, in the meantime, been on the hill, and detected a rich vegetable soil. We returned immediately to Adda-Kuddu, which we reached at dark. The current here is two knots. The natives had brought cocoa-nuts on board, and on my inquiry, they said, the tree grew on the other shore; but afterwards they asserted, that it was not found here at all. Mr. Brown had brought me from thence a *Unona* (!) and an apparently entirely new genus of the family of *Leguminosæ*, with a fruit similar to *Swartzia*, and I subsequently found this little tree every where on the shore about Stirling.

Sunday, September 12.—We remained quietly at anchor.

Monday, September 13.—I went on shore to botanize amongst the ruins of Adda-Kuddu, but the hot sun quickly forced me back. *Papaws* are here still frequent; also some sorts of *Cucurbitaceæ*, which, with *Asclepiadeæ* and *Creepers*, have overgrown the ruined huts. A *Lemna* growing in a puddle was the same as I had seen at Iddah. I observed here but a single *Pistia* float by; whilst the day before, we met with them in abundance, floating on the Quorra (Niger). In the afternoon I went again to Stirling hill, and explored it for a short time; but found the soil to consist of sandstone, impregnated with iron, and therefore bad. A few spots only exhibited vegetable soil, formed of decomposed plants.

Tuesday, September 14.—At six o'clock we climbed Mount Pattéh. It is rather steep, difficult of ascent, and covered with many boulders of red iron sandstone. The pea-like formation is remarkable. There were single strata of quartz. The cultivation of *Yams, Capsicum, Guinea grain*, (now without blossom or fruit) a bean or *Dolichos*, and a few *Bananas*, continued to the summit. A streamlet, running down from somewhere about midway of the mount, had a bed of clay, which is also more or less mixed with the soil generally, and along this channel the chief brushwood grew. Largish isolated trees are met over the whole declivity, probably remnants of former forests. It looks as if the useful trees had been preserved. Four species occurred particularly often; *Baobab*; *Parkia*, now without fruit or blossom, but with foliage; *Sarcocephalus*, sometimes a stately tree, but with long branches showing a disposition to climb; and the *Hog-plum* (*Spondias*), but this chiefly at the summit. The barometer gave 1200 feet, according to a hasty calculation, (subsequently 1150), above the level of the Niger. On the top is table land (level plateau) much cultivated, and covered often with brushwood and a tree with yellow flowers, I think

Beauvois' *Spathodea* ;[*] (another tree, of which blossom[†] and fruit are preserved in acid), a shrubby *Mimosa* and species of *Ficus*, without fructification. A species of *Tephrosia* was frequently cultivated. I saw no *Palm*. The natives appeared, as yet, to have had no communication with Europeans ; they were armed with bows and arrows, much like those of the country near Angori ; their arrows are said to be poisoned, and their clothes consisted of stuffs, manufactured by themselves. They were of a gentle nature, and the mere word " scanu" was sufficient to conquer their diffidence. For some presents which we gave them, they expressed their thanks by bowing to the ground, and strewing repeatedly dust on the forehead, perhaps twelve times ; the women uncovered the bosom and put dust on it. Decency amongst the women seemed to require, that the upper garment should be tightly fastened above the bosom, so as to cover it completely. The boys we saw were circumcised.

Towards two o'clock I returned, not feeling well, for I had exerted myself too much. The sun had been clouded, and I had latterly protected myself with an umbrella ; nevertheless in the afternoon and evening I felt so tired, and yet so heated and restless, that I cannot recollect ever having been so uncomfortable and disabled, without absolute illness. Every exertion seems now to produce more or less this effect. Restlessness and exhaustion, burning of the skin and eruptions, become quite insufferable.

Tuesday, September 14.—To-day I had to take care of the plants, which I gathered yesterday, and wished to arrange my collection, for which purpose I had been unable to obtain either room or a case, and was therefore obliged to preserve them, as best I could, in bundles in my cabin ; a plan which was good neither for them, nor for myself. My assistant, now somewhat trained, was unfortunately the best linguist, and our intercourse with the natives being very great, I could hardly ever avail myself of his aid. At a distance this all appears trivial, but to a traveller in my situation the frequent repetition of such trials is extremely disheartening. The natives, perceiving our wishes, brought chiefly arms on board, some apparently made in a hurry for the occasion; also calabashes, mats and sacks of plaited grass, honey, palm-wine, stuffs of their own manufacture, reels of cotton, earth-nuts, yams, goats, sheep, poultry and fat. In return they took cowries, cloth, wearing-apparel and particularly looking-glasses; the latter being chiefly bought by the women. The women are often beautifully painted with red Camwood (?) pulverized and made into balls as large as a fist, and thus sold; the eyelids they paint with antimony, which they brought with them on board in very neat cylindrical cases made of skins.

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[*] A handsome tree, with dark scarlet flowers, of the same genus, was frequent on the declivity.

[†] A high, much branched, leafless *Euphorbia*, the juice of which is said to cause blindness.

Wednesday, September 15.—The intercourse with the natives continued. They bring, besides the things mentioned; tobacco, which they call taba, in flat rolled disks; also a chalk-like substance, prepared from burnt bones, with which they rub the fingers when spinning, it is called Effu in the Aku language, Alli in Houssa, they kept this in small calabashes, or in masses like elongated dice; whips of hippopotamus skins, called Uoji; some rice, grown on the left shore, and a few Limes. The process for discharging their arrows seemed to me ingenious. They have a knife with a somewhat broad handle into which they insert the hand,* and pull up the string of the bow with the back of the handle, being thus sure not to hurt the hand, and are thus ready to kill with the knife whatever the arrow may have hit. On the left upper arm they carry arrows for their immediate use in a wooden quiver.

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* In Treviranus' Memoir occurs the following quotation from a letter of Dr. Vogel's, more clearly showing their manner of using the bow. "In the right hand they hold a knife with a hollow handle, through which they place four fingers in the middle of the handle. On the thumb they have an iron ring, and draw between this and the handle the bowstring, so that they cannot injure the hand."—(See vol. v. p. 615, of the London Journal of Botany).

Thursday, September 16.—Captain Trotter wished me to visit the left shore. The current on the right side, where we were at anchor, was 1 and 1½ knots; but towards the middle it ran much stronger, and in some places the boat could hardly make way against it. We kept therefore, after reaching the left bank of the Niger, close to the jungle, (I must not say *shore,* for every thing was under water). Amongst different things, I noticed a rather thick tree, 30 feet high, which attracted my attention by its large fruit; it is apparently an *Artocarpus.* The Kroomen call it *Oqua,* and told me that they eat the boiled seed. I saw only fruit and female blossoms; no male flowers. The tree contained much milky juice. Besides this I found here a seemingly new species of *Anona,* and the above-mentioned genus of *Leguminosæ,* occurring often as a small branchy tree, with white flowers, remarkable for its bright red terminal leaves. In those nooks, where the current was weak, the *Pistia* grew in large quantities, mixed with *Ceratophyllum,* without fructification, and the *Salvinia,* and *Jungermannia* (?) of Ibu. At last we reached a bit of dry land, deep in the bush, where some negroes had pitched their tent-like straw huts for temporary dwellings. They told me that they had come from the opposite side (from Dgaggu?) to plant this place, against the rainy season; but they had not yet begun. The ground, now inundated, would be cultivated in the dry season, for it all consisted of rich vegetable soil.

On my return, I could find no place but the deck for my plants. I then went on board the "Albert," to make my report to Captain Trotter; but was obliged to stop there a long time, for want of a boat to return. In the mean time, we had a heavy shower of rain, and on my subsequent arrival in the "Wilberforce" I found not a few of my plants spoiled, or quite lost, amongst them the *Anona*; and I was unable to care for the rest, every nook that I could use having been filled long since, and my cabin was crammed nearly full. During the last four weeks, for want of suitable boxes in which to preserve my collections, I was unable to do almost anything in Botany.

Friday, September 17.—I bought to-day a complete set of arms of Adghó for 2000 cowries. Captain Allen purchased an ox for 30,000 cowries, from the son of a former chief of Adda-Kuddu, whom he called Mallen Katab, and who had poisoned old Pascoe and the Kroomen. This son, Machmakal, was one of the handsomest negroes I ever saw; but he wanted to give his father's name differently. He made me a present of a pair of shoes of antelope hide, very well made. He understood a little Arabic, though he could not pronounce it according to Müller's notions, but he wrote it; and singularly enough, he put the paper not in the usual manner before him, nor writing the letters from the top downwards, but so, that they must be read in the usual manner. I have his name and mine written by him. I had understood his name as Makola. According to Müller, what he wrote, is in the Algerine dialect, meaning: Machmakal.—(Vogel's Private Journal).

Saturday, September 18.—The number of sick increases considerably, and the "Soudan" is to take them to-morrow down to the sea. I *therefore wrote letters to-day.* I continue unwell; *head-ache and fever.*

Written later, at Fernando Po.

Sunday, September 19.—Decided, but slight fever. The "Soudan" leaves for the sea.

Monday, September 20.—It is settled that the "Wilberforce" shall also proceed to sea with the sick, which have much increased in number, and my first resolve was to remain here; but our circumstances on shore were such, that as an invalid, I could hardly hope to be comfortable, and I therefore take Captain Allen's advice, which is to go down to sea in the "Wilberforce," and stop at Fernando Po.

Tuesday, September 21.—At six o'clock in the morning we proceeded down the river, I becoming daily worse. We arrived at Fernando Po on the 1st of October, and I earnestly entreated to be put on shore, for the vessel was to proceed to Ascension Island, and stop there several months; which would have been for me worse than a prison. On leaving the ship I had still violent fever, which only quitted me after a week and a half. In the landing of my collection I was kindly assisted by Mr. Forster. Of several of the most interesting fruits, however, which, until disabled, I had kept on deck to dry, nothing was to be seen. I regret especially the fruit of *Adansonia,* ripe fruit of *Artocarpus,* a fruit, the blossom of which I have never seen, from Mount Pattéh, being amongst the most interesting, with many more. Captain Allen had the goodness to order us a lodging at Mr. White's, the agent of the West African Company; and Mr. Roscher having also determined to remain here, he and I agreed to live together. The house intended for us not being quite ready, Mr. White was so kind as to give us, in the mean time, quarters in his own dwelling. We found soon how difficult it was to obtain on this island the necessary provision, and as we had to be our own housekeepers, we asked for some articles from on board ship, that we might not at the outset be quite bare.

On the fifth of October we landed. They sent us from our mess a few necessary utensils, cups, plates, &c., which were not to be obtained any how on the island, and for which we felt very grateful; but time forbade their furnishing us with the least provisions, the "Wilberforce" sailing on Saturday. On Monday, October 18, we quitted Mr. White's house, to make room for the sick which had arrived on the previous day, by the "Albert." I had to be carried to our new residence, for we were in miserable plight, and to get a piece of bread for money on the island, was actually impossible; and had not some acquaintances obligingly supplied us in some degree, we should have had to fast this and the next day, in the strictest sense of the word. We therefore addressed Captain Trotter, who made arrangements, by which we were at least spared the necessity of running about in the heat of the day for provisions, as all those, who have no stores of their own, are obliged to do.

Here I stop. My recovery proceeds but slowly; to-day (October 25), I am not yet able to walk for half an hour. What concerns our stay at Fernando Po must be written hereafter.

These are the concluding words of the *Botanical Journal.* In Dr. Vogel's *private Journal* there are some few entries after this date, referring mostly to personal affairs, despatches, provisions, and the like..

It would appear that, towards the end of November, he felt strong enough to begin his botanical excursions, and says: "The heat is too great to allow convalescents, who are still very weak, to work much. Besides plants, I have now taken to collecting insects. Roscher has quite a mania for sporting;"—and again:—

December 2.—"We had intended to proceed this week into the mountains, to the tent which had been erected for Captain Trotter; but ever since Sunday, Roscher has been ill, probably in consequence of his sporting, often in the heat of the sun, and Thomson, who during the absence of the "Albert," remains here as doctor, attends him. There are several cases of fever; amongst them White, the storekeeper, and the doctor; all people who have been here for some time! The weather is certainly not genial to European constitutions. Mornings and evenings are dull and foggy, though not so thick but that one can see the country; noon and afternoon changeable, a few hot hours, with west and south wind. Because of Roscher's illness I must attend to our housekeeping, which comes rather awkward to me. In the meantime, I continue my previous way of living, *i. e.* I make excursions from three o'clock till dusk (6 o'clock), but am very anxious to get into the mountains. Yesterday I went towards the farm, to seek for the *Calamus* which Roscher had seen, but could not find it."

With these words Dr. Vogel's *private Journal* ends; and we may here introduce an extract from the Report of Captain Trotter, addressed to the Right Honourable Lord Stanley, Principal Secretary of State for the Colonies, dated March 15, 1843.

"We found at Clarence Cove, Fernando Po, on our return in the Albert from the Niger, Dr. Vogel and Mr. Roscher. These indefatigable gentlemen, of whose zeal on all occasions it would be impossible to speak too highly, had fallen sick at the confluence, and were obliged to descend the river in the "Wilberforce;" but they declined going to Ascension for the re-establishment of their health, hoping to be able to pursue their scientific researches in Africa. Dr. Vogel lived only to the 17th December following; but his memory will be cherished, as long as Botany remains a science."

FLORÆ TASMANIÆ SPICILEGIUM; *or Contributions towards a Flora of* VAN DIEMEN'S LAND; *by* J. D. HOOKER, M.D. R.N. F.L. & G.S.

(*Continued from Vol. II. p.* 421, *of the Journal of Botany*).

Compositarum nova Genera et Species.

1. Eurybia *persoonioides*, DC.

Var. *β. lanceolata*; foliis lanceolatis acuminatis.

HAB. Mt. Wellington; *Gunn. v. v. n.*

2. Eurybia *alpina*, Hook. fil.; fruticosa, ramis erectis, foliis subter pedicellis involucrisque pube appressa pallide brun-

nea tomentosis, foliis elliptico-obovatis obtusis integerrimis supra nitidis, pedunculis axillaribus unifloris validis folio subæquilongis, involucri campanulati squamis plurimis imbricatis, acheniis glaberrimis.

Hab. Lofty mountains; *Lawrence, Gunn. v. v. n.*

Ab E. *persoonioide*, cui proxima, conspicue differt foliis minoribus, tomento brunneo, pedicellis brevioribus validioribusque, capitulis duplo majoribus, squamis involucri plurimis multifariam imbricatis acheniisque glaberrimis.

3. Eurybia *Gunniana*, DC.

α. *longipes*; pedicellis elongatis, capitulis mediocribus, foliis anguste lineari-oblongis obtusis supra puberulis glabratisve.

β. *brevipes*; pedicellis brevioribus, capitulis paulo majoribus, foliis brevioribus angustioribusque. An species distincta?

γ. *angustifolia*; pedicellis brevioribus, capitulis ut in α, foliis linearibus. Vix sp. distincta.

δ. *microcephala*; omnia ut in α, sed capitulis minoribus pedicellisque brevibus. Certe varietas E. *Gunniana*, D.C. (fid. Herb. Lindl.)

ε. *cana*; dense cano-tomentosa, pedicellis brevibus, capitulis ut in α, foliis parvis 3-4 lin. longis valde coriaceis utrinque sed subter præcipue cano-tomentosis. Vix sp. distincta. E. *subrepanda*, D.C. (*fid. Herb. Lindl.*)

ζ. *salicina*; omnia ut in α, sed foliis majoribus linearibus integerrimis subter appresse canis subglaucescentibus.

η. *scaberula*; pedicellis capitulisque ut in α, foliis latioribus lineari-ellipticis argute dentato-serratis supra scaberulis.

Hab. All the above varieties are more or less abundant, throughout Tasmania; *Lawrence, Gunn,* &c. *v. v. n.*

4. Eurybia (Brachyglossa) *linearifolia*, DC.; fruticosa, ramulis cano-tomentosis strictis erectis, foliis alternis anguste linearibus subacutis integerrimis marginibus revolutis subter appresse cano-tomentosis, capitulis in axillis foliorum sessilibus solitariis foliis ter brevioribus in spicam

elongatam foliosam dispositis, involucro basi conico, pappo albido, ligula stylo breviore.

Hab. Port Dalrymple, on the beach; (*Hb. Hook.—Fraser*, comm.)

Ramuli 4-5-unciales. *Folia* patula, fere uncialia, vix 1 lin. lata. *Capitula* ¾ unc. longa; involucri squamis cano-pubescentibus; ligulis valde inconspicuis.

Differs from De Candolle's description, only by the white pappus.

5. Eurybia *ramulosa*, Lab.

Var. *β. elongata*; ramulis elongatis, apice floriferis.—An sp. distincta?

Var. *γ. floribunda*; ramulis brevioribus perplurifloris.

Var. *δ. densa*; fastigiatim ramosa microphylla.

Var. *ε. ericæfolia*; foliis linearibus, subimbricatis.

Var. *ζ. laxa*; laxe ramosa, foliis subtus tomentosis.

Var. *η. grandifolia*; foliis majoribus.

Hab. Very abundant throughout the colony; *Lawrence, Gunn. v. v. n.*

6. Eurybia (Argophyllæa) *obcordata*, n. sp.; ramulis brevibus foliisque subter pube arcte appressa subsericeo-tomentosis, foliis brevissime petiolatis crenato-obcordatis apice obtuse 4-dentatis supra nitidis, pedunculis validis solitariis axillaribus unifloris folio brevioribus, involucri conici squamis pubescenti-tomentosis, acheniis glabratis, pappo albido rufescente copioso, radii ligulis stylo pluries longioribus.

Hab. Lofty mountains; *Lawrence, Gunn. v. v. n.*

E. *persoonioide* proxima. *Folia* fere ½ unc. longa, æquilata. —Species distinctissima.

7. Eurybia *pinifolia*, n. sp.; ramis validis lignosis, ramulis brevibus sericeo-tomentosis, foliis in ramulos abbreviatos fasciculatis rigidis linearibus pungentibus teretibus marginibus ad costam revolutis supra canaliculatis junioribus sericeis senioribus glaberrimis, pedunculis solitariis axillaribus terminalibusque simplicibus v. furcatis folio plerumque longioribus, pappo rufo vel pallido.

Hab. Mountains; *Gunn.*

Frutex humilis, lignosus, facie *Hakeæ*. *Folia* uncialia capitulis $\frac{1}{3}$ longiora.

8. Eurybia (Spongotrichum) *linifolia*, n. sp.; glanduloso-puberula, subviscosa, ramis brevibus apice corymboso-floriferis angulatis, foliis linearibus utrinque obtusis integerrimis enerviis supra sulcatis marginibus tenuiter revolutis utrinque viscosis, pedunculis brevibus, involucri subcampanulati squamis pluriseriatis imbricatis obtusis medio coriaceis marginibus scariosis glutinosis, acheniis glandulosis.

Hab. Woolnorth; *Gunn.*

Fruticulus humilis, ramosus; ramis erectis angulatis foliosis. *Folia* uniformia, 1 unc. longa, 1 lin. lata. *Capitula* ad apices ramulorum corymbosa, $\frac{1}{2}$ unc. longa. *Ligulæ* majusculæ. *Pappus* pallide rufescens.

Allied to E. *glandulosa*, but exceedingly distinct.

9. Eurybia (Spongotrichum) *floribunda*, n. sp.; ramulis gracilibus divaricatis strictis foliisque subter appresse furfuraceo-tomentosis, foliis parvis fasciculatis brevissime petiolatis late oblongis obtusis super glabris coriaceis marginibus revolutis patentibus reflexisve, capitulis parvis perplurimis erectis secus partem ramulorum superiorem dispositis sessilibus ramulosve brevissimos terminantibus, involucri squamis glabratis dorso viridi marginibusque scariosis glandulosis ciliatis.

Hab. Banks of rivers; *Gunn. v. v. n.*

E. *lepidophyllæ* proxima, differt ramis gracilibus furfuraceis non tomentosis magisque foliosis, foliis distantioribus, capitulis sessilibus vel ramulis brevissimis pedicellatis. Color luridior.—Species satis distincta.

10. Olearia *affinis*, n. sp.; ramulis cano-tomentosis, foliis amplis petiolatis anguste ovato-lanceolatis acuminatis basi rotundatis supra glaberrimis lævibus reticulato-venosis subter cano-tomentosis marginibus lente recurvis integerrimis vel obscure sinuato-dentatisve, capitulis paniculatis

parvis, pedunculis gracilibus ramosis bracteatis, involucri squamis pauci-seriatis, ligulis elongatis, pappo albido v. rufescente vix biseriato, acheniis pubescentibus.

HAB. Rocky places, often near the sea; *Gunn. v. v. n.*

Arbuscula ramosa. *Folia* 3—4 unc. longa, 1—1½ lata, plerumque integerrima, petiolo nunc ½ unciali. *Paniculæ* plerumque terminales, amplæ, multifloræ, ramis inferioribus divaricatis recurvis.

11. Eurybiopsis *scabrida*, n. sp.; tota setis brevibus patentibus rigidis hispido-pilosa, ramis erectis foliosis apice monocephalis, foliis rigidis parvis sessilibus obovato-spathulatis obtuse sinuato-dentatis coriaceis superne scabridis subter marginibusque ciliato-hispidis, capitulis majusculis solitariis terminalibus, involucri squamis rigidis anguste linearibus dorso subcarinatis hispido-pilosis marginibus tenuiter scariosis, ligulis apice subintegris, pappo pallide rufescente scabrido, acheniis hispidis.

HAB. Open places, New Norfolk; *Gunn.*

Exemplar unicum ¾ pedale, e basi ramosum. *Rami* virgati, crassitie pennæ corvinæ. *Folia* 3—5 lin. longa, vix 2 lata, dorso subcarinata v. plana. *Capitula* ¾ unc. lata. *Involucri* squamæ vix 2-seriatæ.

12. Eurybiopsis *gracilis*, n. sp.; ramis ramulisque gracilibus cano-tomentosis foliosis, foliis petiolatis anguste lineari-spathulatis apice rotundatis integerrimis v. rarissime 2-3 lobatis utrinque pilis laxis albidis molliter pubescentibus enerviis, capitulis terminalibus majusculis, involucri squamis anguste linearibus acuminatis pubescentibus marginibus scariosis, pappo pallido, acheniis elongatis puberulis.

HAB. New Norfolk, Launceston, &c. *Gunn. v. v. n.*

Herba basi suffrutescens, ramis ramulisque elongatis, his apice nunc corymboso-ramosis. *Folia* subflaccida, ½—1 unc. longa, apices versus 2—3 lin. lata. *Capitula* ¾ unc. lata. *Ligulæ* cæruleæ?

13. Aplopappus *Tasmanicus*, n. sp.; glaberrimus (nisi scapi

apice), radice perennante? mono-tricipiti, foliis radicalibus plurimis confertis recurvis longe petiolatis elliptico-spathulatis acutis coriaceis integerrimis sub-nitidis, scapo gracili erecto solitario unifloro bracteato superne tantum puberulo, capitulis suberectis, involucri squamis linearibus subobtusis acuminatisve dorso scaberulis apices versus purpurascentes ciliatis, floribus radii 2-serialibus ligulis disco longioribus, pappi setis basi distinctis, receptaculo alveolato, acheniis glaberrimis.

HAB. Mount Wellington; *Gunn.*

Species elegans. *Folia* radicalia ½—1½ unc. longa, coriacea, longe petiolata, enervia. *Scapi* graciles, 1—4 unc. longi, bracteolis linearibus 2 lin. longis aucti. *Capitula* sub ½ unc. lata. *Flores* radii purpurei. *Achenia* glaberrima; pappo sordide albo.—Species hæc et sequentes inter se affines, *Aplopappo* vix conveniunt, quamvis mediantibus A. *alpigeno*, Torr. et Gr., A. *stolonifero*, Hook. (boreali-americanis) aliisque a genere supra dicto ægre distinguendæ. *Achenia* omnium glaberrima v. parce pilosa. Ab. *Erigeronte* differunt ligulis uni-v. pauciserialibus habituque plerarum.

14. Aplopappus *Gunnii*, n. sp.; totus glanduloso-puberulus, radice perennante? foliis coriaceis subsessilibus obovato-spathulatis apice rotundatis obtuse serrato-dentatis, scapo erecto subflexuoso superne pauci-bracteato, bracteolis anguste lineari-spathulatis, involucri squamis linearibus acuminatis glanduloso-pilosis, flosculis radii 2—3 serialibus purpureis, receptaculo alveolato, pappo pallido, acheniis glaberrimis.

HAB. Mount Wellington; *Gunn.*

Omnia A. *Tasmanici*, sed major, piloso-glandulosus; bracteæ scapi pauciores et longiores, folia multoties latiora dentata vix petiolata, scapus validior.—Planta *Bellidis* facei.

15. Aplopappus *Pappochroma*, (Erigeron Pappochroma, *Lab.*) glaberrimus (nisi scapi apice), radice annua mono-tricipiti, foliis breviter petiolatis obovato-spathulatis apice rotundatis coriaceis integerrimis v. obscure dentatis, scapo

plerumque solitario gracili glaberrimo apice glanduloso-puberulo superne bracteolato, capitulis solitariis parvis, involucri squamis linearibus acuminatis dorso puberulis.

HAB. Mount Wellington and Recherche Bay; *Gunn.*

Inter species 2 precedentiores quasi medius, sed exemplaria e locis valde diversis lecta inter se conveniunt, et ab utraque differunt. Statura, defectu pilorum, scapoque gracili A. *Tasmanico* accedit, A. *Gunnii* autem forma foliorum.

16. Aplopappus *bellidioides*, n. sp.; humilis, annuus, subhispido-pilosus, foliis obovatis in petiolum latum angustatis obtusis integerrimis v. rarissime uni-bidentatis utrinque pilis brevibus albidis sparsis subhispidis, scapo brevi plerumque foliis breviore nudo v. 2-3-bracteolato, capitulo solitario majusculo, involucri squamis paucis linearibus acuminatis pilosis, ligulis sub 2-serialibus apice 2-3-dentatis, acheniis glaberrimis, receptaculo alveolato.

HAB. Middlesex Plains; *Gunn.*

Species parvula, tota pilis brevibus albidis hispidula. *Folia* plana, ½—½ unc. longa, nunc latiora et in petiolum evidenter angustata, nunc angustiora et subspathulata. *Scapus* plerumque perbrevis, rarius elongatus. *Capitulum* pro planta majusculum, ½ unc. latum.

17. Aplopappus *stellatus*, n. sp.; scapigerus, foliis omnibus radicalibus stellatim patentibus lineari-oblongis elongato-linearibusve obtusis integerrimis coriaceis subconcavis marginibus ciliatis glabratisve, scapo breviusculo puberulo bracteolato, bracteolis linearibus, involucri squamis glabratis subacutis, pappo sordide albo setis inæqualibus, achenio scabriusculo.

HAB. Mountains; *Gunn.*

Radix descendens, valida, fibris crassis aucta. *Collum* brevissimum, uni-multiceps. *Folia* conferta ½—¾ unc. longa, 1½ lin. lata, uninervia, marginibus basi præcipue pilis rigidiusculis patentibus ciliata, cæterum glaberrima, coriacea, subnitentia. *Scapus* 1-1½ uncialis. *Bracteolæ* 1-2 lin. longæ. *Capitulum* ½ unc. latum.

17. Lagenophora *latifolia*, n. sp.; hispido-pubescens, stolonifera, foliis paucis late obovatis spathulatis in petiolum brevem attenuatis utrinque hispidulis obtuse sinuato-dentatis, scapis erectis nudis, involucri squamis glabratis glaberrimisve acuminatis, achænio compresso lanceolato in rostrum sensim attenuato glanduloso.—An L. *Billardieri* var.?

Hab. Mt. Wellington, *Gunn*.

L. *Billardieri* proxima, sed folia multo latiora brevi-petiolata acheniaque (matura?) angustiora.

The specimens sent by Mr. Gunn are marked by himself as belonging to a distinct species; though, except the very broad leaves, they possess little claim to specific distinction.

18. Lagenophora *montana*, n. sp.; pusilla, glaberrima vel glabrata, foliis ellipticis subacutis in petiolum gracilem attenuatis irregulariter remote dentatis, scapo solitario erecto gracili bracteolato, involucri squamis glabris obtusis, achæniis obovato-lanceolatis in rostrum breve abrupte angustatis viscosis.

α. *major*.

β. *minor*.

Hab. Var. α. Marlborough and Woolnorth.—Var. β. Mt. Wellington, *Gunn*.

Species distinctissima, præcipue squamis involucri obtusis, foliis plerumque longe petiolatis, achæniique rostro breviusculo. *Folia* ½-¾ unc. longa, rarius in var. α. 1½ uncialia. *Petiolus* folio æquilongus v. brevior, gracilis. *Scapus* squamis linearibus semper instructus.

Nov. Gen. Emphysopus, *Hook. fil.*—*Capitulum* multiflorum, heterogamum. *Flores radii* ligulati, fœminei, 1-seriati; *disci* tubulosi, 5-dentati, masculi; *antheris* liberis. *Receptaculum* planiusculum, alveolatum; *involucri* squamis late oblongis, sub 3-serialibus, obtusis, basi coriaceis, appressis, marginibus membranaceis. *Achænia* elliptico-lanceolata, compressa, utrinque subacuta, glaberrima, erostrata.—Herba Tasmanica, *subrobusta*, *hispido-pubescens*, *scapigera*, foliis *lineari-oblongis*, *apices versus grosse obtuse* *dentatis*; scapis *plurimis, superne sensim incrassatis inflatis, infra capitulum parvum contractis*. Involucrum *late hæmisphæricum*.

19. Emphysopus *Gunnii*.

HAB. Dry banks, *Gunn*.

Radix præmorsa, fibris incrassatis aucta. *Folia* omnia radicalia, patentia, utrinque hispido-pilosa, 2-3-uncialia, ½ unc. lata. *Scapi* foliis æquilongi, sursum gradatim incrassati, infra capitulum contracti. *Capitula* ¼ unc. diametro. *Fl. radii* parvi, ligulis brevibus inconspicuis.

20. Brachycome *scapæformis*, *β. glabra*, DC., achæniis late obovatis.

HAB. Hobarton, not uncommon, *Gunn*, &c. :—*v. v. n*

γ. montana, crassior, achæniis angustioribus.

HAB. Mt. Wellington, summit; *Gunn*. ;—*v. v. n*.

Achænia alata, alis primum ciliatis, demum glabratis, grosse crenatis. Vix B. *leucanthemifolia*, Benth.

21. Brachycome *tenuiscapa*, n. sp.; glabrata v. glaberrima, scapigera, foliis omnibus radicalibus patentibus anguste subcuneatis v. lineari-obovatis obtusis coriaceis fere glaberrimis apices versus profunde 3-5-crenato-dentatis, scapo elongato gracili erecto glanduloso-pubescente bracteolato, bracteolis 3-4 inferioribus subfoliaceis, involucri squamis late linearibus obtusis, achæniis non alatis obovatis glaberrimis, pappo minuto.

HAB. Middlesex plains, *Gunn*.

Radix prostrata v. descendens, gracilis, fibrosa. *Folia* angusta, flavo-virescentia, sessilia v. petiolo lato a lamina non distincto, ½-2 unc. longa, 3-4 lin. lata, glabrata v. pube subglandulosa. *Scapi* graciles. *Capitula* ⅓ unc. lata.

A characteribus B. *pumilæ* conspicue differt achæniis glaberrimis compressis non clavatis, foliis epetiolatis, &c.—Sectio hujus generis valde naturalis ob achæniis exalatis, speciebus scapigeris conveniens. Squamæ involucrales quoque characteres summi juris prebeunt, nempe obtusæ et acuminatæ.

22. Brachycome *decipiens*, n. sp.; glaberrima, radice præmorsa, fibris validis numerosissimis, foliis omnibus radi-

calibus patentibus coriaceis oblongo-spathulatis obtusis subacutisve irregulariter crenato-dentatis, scapo foliis æquilongo nudo v. rarius 1-2-bracteolato, capitulis inclinatis, involucri squamis obtusis, achæniis compressis oblique obovatis non alatis puberulis apice emarginatis.

HAB. Abundant; *Lawrence, Gunn.*:—*v. v. n.*

Species in Tasmania nostratem *Bellidem perennem* habitu, loco et copia omnino referens.

23. Brachycome *squalida*, n. sp.; caule gracili basi nudo decumbente, ramis ascendentibus foliosis ramulosis minute hispidulis, foliis parvis coriaceis profunde sinuato-pinnatifidis obscure scaberulis laciniis linearibus brevibus vix acutis, capitulis ramulos longe nudos glanduloso-puberulos terminantibus, involucri squamis lineari-oblongis obtusis margine apiceque scariosis fimbriato-laceris, achæniis obovato-compressis anguste ciliato-alatis.

HAB. Spring Hill; *Gunn.*

Caulis filiformis, tenuis, crassitie pennæ passerinæ, ramosus, rigidus. *Folia* coriacea, suberecta, siccitate rigida, vix ⅓ unc. longa. *Capitula* ramulis longe nudis pedunculata, ⅙ unc. lata. *Receptaculum* conico-elongatum.

Nov. Gen. CTENOSPERMA, *Hook. fil.*—*Capitulum* multiflorum, heterogamum; *fl. radii* fœmineis pluriserialibus; corolla nulla, stylo sinu achænii inserto bifido; *disci* masculis tubulosis, 4-dentatis, stylo indiviso, stigmate disciformi. *Involucrum* biseriale; squamis paucis, lato-oblongis, obtusis, herbaceis. *Receptaculum* planiusculum, papillosum. *Achænia radii* compressa, juniora alata, alis supra medium ciliatis, pilis latiusculis, basi globoso-incrassatis, matura oblonga, obcompressa, medio turgida, alis incrassatis.—Herba Tasmanica *alpina, glaberrima*; ramis *prostratis foliosis*; foliis *pinnatifidis*; pedunculis *brevibus crassis*; capitulis *parvis subsphæricis.*

24. Ctenosperma *alpinum.*

HAB. Marlborough, *Gunn.*

Radix e fibris crassis descendentibus. *Rami* plurimi prostrati, nunc radicantes, foliosi, 3-4 unc. longi. *Folia* 1-2 uncialia, herbacea, subcarnosa, petiolata, petiolo basi vagina membranacea aucto, lamina lineari-oblonga, profunde pinnatifida; laciniis subremotis, linearibus, acutis, subrecurvis, integerrimis v. margine superiore 1-2-dentatis. *Capitula* solitaria, pedunculo ½ unciali crasso. *Involucrum* basi cum pedunculo subcontinuum, squamis glandulosis. — Genus *Hippiarum*, *Cotulæ* characteribus proximum, sed differt floribus disci masculis, aliisque notis supra dictis.

Nov. Gen. SYMPHYOMERA. *Capitulum* multiflorum, heterogamum: *fl. radii* pluriserialibus glandulosis fœmineis; corolla conica brevi achænio omnino coalita, compressa, ore obscure bi-tridentato; styli ramis subinæqualibus; *fl. disci* masculis tubulosis 4-dentatis, styli apice disciformi. *Involucrum* sub 2-seriale, squamis herbaceis, oblongis, obtusis. *Receptaculum* parvum conicum, papillosum. *Achænia* disci abortiva; radii compressa, alis subglandulosis, corolla persistente coronata.—Herba Tasmanica *acaulis v. caule repente, parce molliter pilosa*; foliis *pinnatifidis*; pedunculis *breviusculis 1-floris*.

25. Symphyomera *Filicula.*

HAB. Hampshire Hills, Mt. Wellington, *Gunn.*:—*v. v. n.*

Caulis brevis v. elongatus, radicans; radicibus e fibris crassis. *Rami* pilis laxis subvillosi v. glabrati. *Folia* petiolata, subuncialia; *petiolo* basi vagina membranacea aucto; *lamina* oblonga, pinnatifida, glaberrima, laciniis patentibus, lineari-oblongis, pauci-dentatis. *Pedunculi* breves, villosi. *Capitula* erecta, ¼ unc. diametro, flava. *Involucri* squamæ medio herbaceæ, nervosæ, pilosæ, marginibus membranaceis. *Fl. radii* perplurimi. *Achænii* integumentum gelatinosum. *Testa* crassa, cellulosa. *Perispermum* (albumen) e cellulis in telam carnosam connexis!

Genus *Strongylospermo* characteribus accedens, differt floribus disci masculis habituque, his notis *Leptinellæ* magis affinis tuboque corollæ cum calyce omnino continuo.

The lobes of the leaf often have the lower surface attacked by a black Fungus, giving an appearance of the fructification of a Fern.

LEPTINELLA. *Subgen.* OLIGOLEIMA: *Involucri squamæ* sub 5, orbiculatæ, 2-seriatæ. *Fl. radii* corollæ breves, latiores quam longæ, persistentes. *Receptaculum* anguste conicum. —An genus distinctum?

26. Leptinella (Oligoleima) *longipes*; glaberrima, caule prostrato repente radicante ad nodos fibroso, foliis erectis longe petiolatis lamina late ovata pinnatifida, laciniis paucis erecto-patentibus obovatis obtusis paucidentatis, pedunculis solitariis axillaribus elongatis foliis æquilongis erectis, capitulo sphærico, involucri hæmisphærici squamis rotundatis herbaceis, flosculis radii glandulosis, achæniis immaturis alatis maturis subtrigonis vix alatis.

HAB. Circular Head; *Gunn.*

Herba subramosa. *Radix* e fibris crassis descendentibus, *Caulis* crassitie pennæ corvinæ, longe repens, 2-8 unc. longus vix ramosus. *Folia* erecta, 1-3 uncialia, longe petiolata; *lamina* $\frac{1}{4}$-$\frac{1}{2}$ unc. longa, obtusa. *Pedunculi* graciles, axillares, erecti. *Capitula* glaberrima; disco foliolis involucralibus longiore.

27. Leptinella (Oligoleima) *intricata*, n. sp.; pusilla, glaberrima v. parce pilosa, intricate cæspitosa, caulibus repentibus radicantibus validis foliosis ramosis apices versus præcipue pilosis, foliis breviter petiolatis, basi in vaginam latam membranaceam dilatatis, lamina ovato-oblonga pinnatifida, laciniis late ovatis profunde trifidis, segmentis acutis obtusisve, pedunculis brevibus, capitulis subsphæricis, involucri squamis orbiculatis herbaceis, flosculis disci achæniisque compressis glandulosis.

HAB. South Cape; *Gunn.*

Caules validi, 2 unc. longi, herbacei, radicantes, subgeniculatim flexuosi, glaberrimi v. pilis paucis flexuosis subtomentosi, foliosi. *Folia* glanduloso-punctata, $\frac{1}{2}$ unc. longa, petiolo valido, lamina 2-3 lin. lata, laciniis discretis, inferioribus trifidis, subtus villosis glaberrimisve, petiolulatis, superioribus lobatis dentatisve. *Pedunculus* folio brevior, puberulus. *Capitulum* 1$\frac{1}{2}$ lin. diametro, sphæricum. *Involucri* squamæ latæ, punctatæ; flosculis grosse glandulosis. *Achænium* radii immaturum oblongum, compressum, alatum; maturum turgidum, corolla styloque persistente terminatum. *Flores* disci subinfundibuliformes, 4-dentati, achænio nullo, styli basi cum tubo corollæ connata.

28. Leptinella (Oligoleima) *multifida*, n. sp.; pusilla, pilosa, caule gracili repente parce ramoso radicante, foliis sublonge petiolatis erectis, petiolo gracili glabrato v. piloso, lamina petiolo æquilonga lineari-oblonga obtusa pinnata, pinnis basi remotis petiolulatis late ovatis pinnatifidis, laciniis lineari-oblongis acutis bi-tridentatis, pedunculis folio brevioribus, capitulis ut in precedente.

HAB. Kangaroo Point; *v. v. n.*

Præcedenti affinis; differt his notis, gracilior, foliis longius petiolatis subflaccidis, lamina oblonga pinnata, pinnis sub 5-jugis late ovatis profunde pinnatifidis.

29. Craspedia *Richea*, Cass.

var. *linearis*; foliis anguste linearibus laxe araneo-tomentosis.

HAB. Western Mountains; *Gunn.*

Inter C. *Richea* et C. *gracilem*, foliis habituque quasi media, priori statura diametroque capituli accedens.

Var. *glabrata*; cæspitosa, parvula, glabrata, foliis linearibus.

HAB. Marlborough, *Gunn.*

An species distincta?

30. Craspedia *macrocephala*, Hook. Bot. Mag. t. 3415.

var. α. foliis linearibus angustis.

HAB. Abundant; *Lawrence, Gunn.*:—*v. v. n.*

var. β. scapo folioso, foliis latioribus superioribus sessilibus basi subauriculatis.

HAB. Eagle-Hawk Neck; *v. v. n.*

31. Craspedia *gracilis*, n. sp.; tota laxe araneo-tomentosa, foliis radicalibus anguste lineari-lanceolatis elongatis longe petiolatis, petiolis basi glaberrimis, scapo elongato gracili superne glabrato foliis linearibus remote bracteato, capitulis globosis, involucri squamis extimis oblongo-linearibus obtusis purpureo cinctis.

Hab. Middlesex plains; *Gunn.*

Erecta, gracillima, 1-2-pedalis. *Folia* radicalia 5-10 unc. longa, utrinque laxe tomentosa, vix ½ unc. lata. *Capitula* 1 unc. diametro.

32. Craspedia *alpina*, Backh. ms.; dense lanata, tomento molli floccoso, caule erecto valido apice monocephalo, foliis radicalibus lineari-lanceolatis utrinque niveis caulinis linearibus sessilibus, involucri squamis late ovatis medio lanatis, marginibus late scarioso-membranaceis. C. *alpina*, Backh. ms. in Herb. Hook.

Hab. Mount Wellington, from 3000 ft. to the top.—*Backhouse: Gunn.*:—*v. v. n.*

Species præcedentibus robustior, 6 unc. ad 1½ ped. alta. *Capitula* diametro fere C. *macrocephalæ.*

33. Ozothamnus *lycopodioides*, n. sp.; virgatus, glaberrimus, viscosus, foliis lineari-oblongis obtusis erectis imbricatis enerviis marginibus minutissime cartilagineo-erosis, capitulis sessilibus in axillis ramulorum subaggregatis, involucri squamis basi extus subaraneosis cæterum glaberrimis scarioso-chartaceis viscosis, achæniis papilloso-pilosis, pappo clavellato.

Hab. Swan Port, *Backhouse.*

Folia siccitate viridia, 2-3 lin. longa, *Lycopodium varium* referens. *Capitula* sessilia, aggregata (exemplare manco). *Involucri squamæ* apice latiores, brunneæ, vix radiatæ.

A congeneribus toto cælo differt.

34. Ozothamnus *ericæfolius*, n. sp.; fruticosus, ramis superne incano-tomentosis patulis subsquarrosis coriaceis breviter linearibus obtusis, marginibus revolutis super laxe lanatis glabratisve, capitulis campanulatis in corymbos parvos parce ramosos aggregatis, involucri squamis viscidis interioribus albidis radiantibus, flosculis sub 6, achænio glanduloso, pappo leviter clavellato scabrido.

Hab. Marlborough, *Gunn.*

Frutex 7-pedalis, ramis subtortuosis, parte inferiore canis araneosisve, superiore appresse tomentosis. *Folia* 4 lin. longa, vix ½ lata, coriacea. *Corymbi* albi, ⅓ unc. lati. *Involucri* squamæ extimæ flavidæ, intimæ niveæ.

35. Ozothamnus *lepidophyllus*; fruticosus, ramis araneosis, ramulis tomento appresso dense lanatis, foliis minimis ramulis arcte appressis ovatis concavis obtusis supra concavis araneosis marginibus replicatis dorso linea albida dense tomentosis, capitulis sessilibus parvis ad apices ramulorum, involucri squamis interioribus radiantibus albidis, flosculis sub-5, achæniis glandulosis, pappo subclavellato scabrido. Baccharis? lepidophylla, *Dec.* v. p. 427.

HAB. Mountains; *Lawrence, Gunn.*:—*v. v. n.*

Frutex 8 ped. altus, ramis ramulisque robustis. *Ramuli* fragiles, ob folia parva arctissime appressa quasi aphylli. *Capitula* in fasciculum vix ¼ lin. diametro aggregata, nivea.—Habitu sed vix characteribus genus novum constituens.

Nov. Gen PTERYGOPAPPUS. *Hook. fil.* *Capitulum* sessile, sub 6 florum, heterogamum; *floribus radii* sub 3 fœmineis linearibus tubo apice inæqualiter 3-dentato, styli ramis apice inæqualiter bifidis; *disci* masculis tubulosis obtuse 5-dentatis, antheris basi bi aristatis, styli apice subdisciformi obscure bifido. *Receptaculum* angustum, planum, nudum. *Involucri squamæ* oblongæ, obtusæ, chartaceæ, sub 2-seriales, æquilongæ. *Achænium* obconicum, semicompressum, lateribus superneque ciliato-hispidum. *Pappi* setæ sub 6, corollis æquilongæ, planæ, lineari-spathulatæ, distiche plumosæ, pennæformes.—Herba Tasmanica *alpicola, muscosa, densissime cæspitosa.* Rami *breves, foliis acutissime imbricatis tecti.* Folia *lævia, obovata, concava, patentia, basi vaginantia, submembranacea, superne coriacea, nitida, apice submucronulata, utrinque medium versus fasciculo densissime piloso barbata.* Capitulum *solitarium, minimum, sessile, post anthesin stipitatum, ut videtur terminale, sed vere ad basin ramuli brevissimi axillare.*

36. Pterygopappus *Lawrencii.*

HAB. Mountains; *Lawrence, Gunn.*:—*v. v n.*

Cæspites nunc late extensi. *Caules* 1-3 unc. longi. *Rami* cum foliis ½ unc. diametro.

37. Helichrysum *semipapposum*, DC.

Var. β. *latifolium*; foliis amplis lanatis.

Var. γ. *filifolium*; foliis fere filiformibus.

Var. δ. *ramosum*; caule basi ramoso, foliis linearibus.

Var. ε. *scabridum*; hispido-pilosum, vix lanatum.

Hab. Most of the above varieties are abundant throughout the colony.

38. Gnaphalium *collinum*, Lab.

Var. α. *Billardieri*; caule gracili stricto erecto, foliis angustis elongatis super glaberrimis nitidis, capitulis pallidis.

Hab. Circular Head and Recherche Bay, &c.

Var. β. *Gunnii*; foliis latioribus super plerumque araneo-tomentosis, capitulis fuscis.

Hab.? (*Gunn in herb. Hook.*)

Var. γ. *Lawrencii*; foliis latioribus utrinque araneosis nunc dense cano-tomentosis, capitulis pallide stramineis.—An sp. distincta?

Hab. Middlesex plains, Western mountains, *Gunn.* &c.

39. Gnaphalium *indutum*, n. sp.; pumilum, herbaceum, totum albido-lanatum, caulibus e radice plurimis gracilibus brevibus adscendentibus apice corymbiferis, foliis paucis flexuosis anguste linearibus obtusis sensim dilatatis radicalibus subnullis, corymbo majusculo polycephalo ramoso, involucri parvi squamis stramineis hyalinis basi bracteatis linearibus obtusiusculis, achæniis subcompressis.

Hab. Circular Head; *Gunn.*

Species ab omnibus hactenus descriptis diversa. *Radix* annua, fibrillosa. *Caules* adscendentes, unciales, ut et folia lana laxa albida tecti. *Corymbi* pro planta magni, ampli, 1 unc. lati, multiflori. *Involucra* nitida, straminea, foliolis linearibus bracteata.

40. Erechtites *hispidula*; *Rich. in Voy. Astrol.* t. 34.

Var. β. caule foliisque inferioribus tantum pilosis cæterum araneosa.—An *E. glabrescentis* var.?

Hab.? (*Gunn in herb. Hook.*)

41. Erechtites *glabrescens*, Cunn.

Var. *β*. foliis radicalibus lineari-oblongis petiolatis, caulinis basi simplicibus non auriculatis. E. *hispidulæ* var.?

Hab. Circular Head, *Gunn*.

42. Erechtites *candicans*, n. sp.; tota appresse araneoso-floccosa, caule ascendente simplici folioso, foliis erectis anguste lineari-oblongis subacutis integerrimis in petiolum basi simplicem attenuatis utrinque sed subter præcipue floccosis superioribus gradatim minoribus angustioribusque, marginibus revolutis, capitulis corymbosis foliolis linearibus bracteatis, involucri squamis apice recurvis, flosculis omnibus tubulosis, achænio hispidulo apice vix attenuato in cupulam pappiferam dilatato.

Hab.? (*Gunn* in herb. Hook.)

Exemplar solitarium 1½ pedale, basi lignosum. *Radix* deest, verosimiliter ima basi divisa, v. ramosa. *Folia* coriacea, 2-3 unc. longa. *Capitula* latiuscula, bis longiora quam lata, ⅓ unc. longa.

43. Erechtites *arguta*, DC.

Var. *β*. *glabrata*, foliis glabratis sinuato-pinnatifidis utrinque asperis coriaceis.

Var. *γ*. *asper*; foliis subcoriaceis arachnoideis asperisque pinnatifidis segmentis latis ovatis, involucri squamis nunc purpuratis. S. *asper*, Cunn. Planta humilis, misera.

Var. *δ*. *obovata*; foliis obovato-lanceolatis petiolatis sinuato-pinnatifidis super glabris subter parce araneosis, ramis foliosis, corymbis paucifloris.

Var. *ε*. foliis obovatis petiolatis sinuato-dentatis pinnatifidisve super asperis subter araneosis.

Hab. Common throughout the colony.

44. Erechtites *Gunnii*, n. sp.; tota laxe araneo-tomentosa v. floccosa, caule erecto basi diviso, ramis foliosis, foliis lineari-obovatis obtusis longe petiolatis integerrimis v. obscure dentatis marginibus recurvis petiolo basi simplici supremis nunc basi latioribus vix auriculatis, capitulis corymbosis angustis, squamis anguste linearibus in discum pappiferum dilatatis.

HAB. Alpine situations, *Gunn.*

An præcedentis forma extrema? *Herba* erecta, robusta, 1½ pedalis; caule ramisque foliosis. *Folia* 3-4 uncialia, ½-¾ unc. lata. *Capitula* fere ½-uncialia, ter longiora quam lata. *Involucri* squamæ sæpissime purpurascentes, acuminatæ, disco æquilongæ.

45. Senecio *capillifolius,* n. sp.; radiatus, herbaceus? ramosus, glaberrimus, caule striato folioso, foliis sessilibus in laciniis distantibus perplurimis filiformibus divisis, laciniis elongatis basi remotis angustissimis bis-terve divisis lobulatisve, capitulis corymbosis late turbinatis pedicellisque subglandulosis, floribus radii paucis, involucri squamis disco brevioribus basi bracteolatis marginibus achæniisque puberulis.

HAB.? (*Gunn in Herb. Hook.*)

Exemplar solitarium, S. *anethifolium* habitu omnino referens, sed capitulis diversissimum.

46. Senecio *rupicola*; A. Rich. *Voy. Astrol.* t. 37.

Var. β. foliis simpliciter pinnatifidis laciniis patentibus linearibus integerrimis lobatisve.

Var. γ. foliis linearibus pinnatifidis brevi-lobatis.—S. linifolius, *Lab. in herb. Hook.*

Var. δ. foliis pinnatifidis segmentis lobatis suberectis.

HAB. Coasts, abundant.

Ab S. *neglecto* (Novæ Zelandiæ) differt solummodo capitulorum magnitudine.

47. Senecio *australis,* Willd.

Var. α. foliis subter glaberrimis.

Var. β. foliis subter appresse lanatis candidis.

HAB. Abundant.

48. Senecio *velleioides,* A. C.

Var. β. capitulis paulo majoribus.

HAB. Road to Mc. Quarrie's harbour; *Gunn.*

49. Senecio *pectinatus,* DC.:—variat foliis linearibus v. obovato-linearibus lobatis obtuse dentatis et pinnatifidis.

Hab. Mt. Wellington, *Gunn.* :—*v. v. n.*

Nov. Gen. Centropappus. *Hook. fil.* *Capitulum* heterogamum, multiflorum, radiatum; *fl. rad.* 1 seriatis, fœmineis, ligulatis, ligula latissima, 9-nervi; styli ramis elongatis; *fl. disci* plurimis tubulosis, superne campanulatis, 5-fidis, lobis lineari-elongatis revolutis; antheræ ecaudatæ; styli rami apice solum penicillati. *Receptaculum* planum, nudum, alveolatum. *Involucri* 1-serialis squamæ rigidæ, coriaceæ, ciliato-fimbriatæ, disco ½ breviores, basi bracteolatæ. *Achænium* erostre, lineari-oblongum, glaberrimum. *Pappi setæ* 1-seriales, flexuosæ, per totam longitudinem barbellatæ, setis cylindraceis acutis superne gradatim elongatis supremis calcariformibus.—Arbuscula Frutexve Tasmaniæ *alpestris, glaberrimus.* Rami *transverse grosse cicatricati, teretes.* Folia *apices versus ramulorum, patentia, linearia, sub-obtusa, sessilia, integerrima,* 1-*nervia, facie* Bupleuri. Capitula *flava ad apices ramulorum corymbosa, pedicellata.* Pappi *setæ fere ut in* Bedfordia.

50. Centropappus *Brunonis.*

Hab. Mt. Wellington, *Gunn.*

Frutex ramulosus, 7-9 pedalis. *Folia* 3 unc. longa, 3 lin. lata, subcoriacea. *Capitula* latiuscula, ⅓ unc. longa, subviscosa. *Pappus* sordide albidus.

Scorzonera. *Subgen.* Moniermos: *Pappus* uniserialis, paleis angustissime linearibus sursum sensim angustatis, scabris. — Herbæ *scapigeræ* Australasicæ, Novæ Zælandiæque, *facie* Hypochæridis.

51. Scorzonera (Moniermos) *Lawrencii*; radice fusiformi simplici v. divisa, foliis glaberrimis anguste linearibus lineari-lanceolatisve gramineis integerrimis pinnatifidis marginibusve lobuliferis segmentis divaricatis recurvisve plerumque linearibus, involucri cylindracei squamis acuminatis, margine anguste membranaceis exterioribus ovatis intimis lineari-lanceolatis.

Hab. Abundant.

Statura foliorumque longitudine et latitudine variabilis.

Scapus folium æquans v. longe superans, glaberrimus v. tenuissime præcipue infra capitula puberulus.—*Scorzoneræ* (Moniermos) *scapigeræ*, Forst. valde affinis, differt squamorum involucri forma.

Botany of the Niger Expedition; by SIR W. J. HOOKER *and* DR. J. D. HOOKER.

(*In continuation of the Journal of the Voyage to the* NIGER *of* DR. J. R. T. VOGEL, Vol. VI. p. 106.)

Notes on MADEIRA *Plants.*

So great was Dr. Vogel's zeal in the cause of Botany, that his collections were commenced before leaving England, during the few days spent by the Niger Expedition in Plymouth Sound. The plants in question consist principally of *Algæ*, and being only the common South of England species, and foreign to the object of this Memoir, need no further notice.

During his four days' stay at Madeira, although unable to make any distant excursions, Dr. Vogel formed a very excellent Herbarium, having been assisted in his investigations by the Rev. Mr. Lowe. These plants we deem worthy of enumeration, as shewing what future voyagers may expect to obtain during an equally short visit, and facilitating the troublesome task of determining their names by those general works on Botany in which alone the Madeira plants are described. The names of those collected by the Antarctic Expedition* on its outward voyage are added to this list; the majority of which, having been gathered (in October) at a very different season, were not met with by Dr. Vogel.

All the species have been determined by Dr. Lemann, whose botanical accuracy and acquaintance with the Floras of S. Europe, Madeira, and the Canaries, entitle us to place great reliance on the authenticity of the nomenclature. That gentleman has also favoured us with some notes on the Botany of Madeira, as compared with other neighbouring islands, which we beg to acknowledge most heartily, and which are embodied in the following remarks.

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* The smallness of this collection is to be attributed to the temporary ill health of the Botanist of the Antarctic Expedition during the ships' ten days' sojourn at Madeira.

The Island of Madeira contains 672 species of flowering plants and Ferns, of which 85 are absolutely peculiar, and 480 common to Europe; 280 are common to Madeira and the Azores (whose Flora is estimated at 425 sp.); 312 (or probably more) to Madeira and the Canaries; and 170 to the neighbourhood of Gibraltar (where 456 have been collected.)

It is remarkable that out of 400 European, and these Mediterranean species, indigenous to Madeira, not more than 170 occur in Gibraltar; for it were natural to suppose that the majority of 480 species are very widely dispersed throughout the S. Europe, and must have migrated by way, as it were, of Gibraltar, if transported across the ocean to Madeira. It is further worthy of observation, that the Azores, though very far to the westward, and the Canaries to the south, both contain many more of the Mediterranean plants seen in Madeira, than does Gibraltar.

A considerable number of the Madeira plants belong to genera not found in the adjacent continent,* but in the Canaries, Azores, or Cape de Verd Islands; thus indicating a Botanical affinity between these groups and confined to them.†

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* Except, possibly, on the hitherto unexplored Atlas Mountains on the Morocco coast.

† The following are some of the leading features of the N. Atlantic Island Floras, as distinguishing it from the continental.

1. Genera confined to the four groups, and represented in two or more of the islands, are:—

Melanoselinum, (Madeira and Azores.)
Æonium, *Aichryson*, (Madeira and Canaries.)
Sinapidendron, (Madeira and Cape de Verd Islands.)
Heberdenia, *Phyllis*, (Madeira and Canaries.)
Campylanthus, Canaries and Cape de Verd Islands.)

The evidence of this relationship is very decided, from the peculiarity of the genera or species giving rise to it. Though comparatively few in number, their characters are so prominent and so widely different from the Mediterranean plants which accompany them, that the latter, though numerically much the greatest, seem superadded, and, as it were, intruders on the former.

The Canaries and Madeira, from their central position and various other causes, are the centre of this Botanical region, called by Mr. Webb the "Macaronesian," and exhibit more peculiarity than the Cape de Verds, (as far as they are at present known), or the Azores. There can be little doubt Madeira was even more peculiar in its vegetation than now, previous to the destruction by fire of the luxuriant forests, of which, almost clothing the lower parts of the island, we have historic evidence. Not only would such a catastrophe destroy species, but their place is afterwards occupied by strong-growing imported weeds, which prevent the re-appearance of the native plants by monopolizing the soil.

With very few exceptions, the Mediterranean are the only plants found in Madeira and the Canaries besides what are confined to those islands; in the Azores, on the other hand, more Northern European species are associated with them. In the Cape de Verds, far to the south, W. African and W. Indian plants replace those of the Mediterranean.

The Island of Madeira participates in the Flora of the

2. Orders represented by closely allied, but peculiar genera:—

SCROPHULARINEÆ.

Isoplexis, (Madeira,) and *Callianassa*, (Canaries.)

CAMPANULACEÆ.

Musschia, (Madeira,) and *Canarina*, (Canaries.)

which are further represented by the singular *Campanula Vidalii* in the Azores, and the equally distinct *C. Jacobæa* in the Cape de Verd Islands.

Other instances of representation by peculiar species are found in the *Seneciones* and *Sonchi*, and in the curious *Euphorbiæ* of the Canaries and the Cape de Verds and several other genera.

W. Indies to a much greater degree than does any part of the adjacent continent:—that this is in a great measure due to the dampness of its insular climate, is clear, from the plants in question being almost entirely Ferns, viz.:—

Acrostichum squamosum, *Sw.*
Aspidium molle, *Sw.*
Asplenium monanthemum, *Sw.*
„ furcatum, *Sw.*
Trichomanes radicans, *Sw.*

species found nowhere on the continent of Europe, or in N. Africa. The presence of a plant belonging to the otherwise exclusively American genus, *Clethra,* is striking, because indicating a further relationship with the Flora of the New World, but of a very different character from the above.

The *Helichrysa* of Madeira are allied in rather a remarkable degree to the S. African species of that genus; a fact which reminds us that the *Myrsine Africana,* a Cape of Good Hope plant, is a native of the Azores, but of no intervening latitude on the West coast of Africa or the Atlantic Islands, nor indeed anywhere else but Abyssinia. Though not a subject falling immediately within the province of the pure Botanist, it may not be amiss here to state, that the four Island-groups in question have been conceived by my friend, Professor Forbes, to be the exposed remains of one continuous and extended tract of land, which formed the western prolongation of the European and African shores. He points to the specific identity of these islands and Europe, as affording Botanical evidence of this ingenious theory, which, however, he chiefly rests on geological grounds. Regarded in this light, the question will resolve itself, in the opinion of most Botanists, into one, concerning the power of migration, and the probability of migration having taken place, to a very great extent, over the Atlantic Ocean, and against the prevailing direction of the winds. It may be contended that such a migration would have peopled these islands solely, or mainly, with certain of the more transportable classes of plants; and that the result must be, that the number of species belonging to each natural order would be great in proportion to the facility with which they bear transportation; while only those Orders could be numerous, which possess that faculty in an eminent degree. But such are not the characteristics of the Mediterranean plants found in Madeira.

On the other hand, the existence of such a continent, during the period when these islands bore the plants which they now produce, would argue the former presence of a very large Flora belonging to the type which now distinguishes the islands in question from the Mediterranean, and of whose previous existence the remaining species, peculiar to them, are the indication. Against this theory it might be urged, that more specific identity between the plants of the several insular groups, would then be the natural consequence, than now is seen; for the affinity of vegetation between the different islands consists, not in identical species, but in representatives. The same agent, in short, which effected the peopling of the several groups with the plants of continental Europe, would also have distributed more equally the non-European species over the same area.

It is, however, to the lofty peaks of Atlas that we must look, if any where, for the continental representatives of those peculiar plants which mark the North Atlantic Insular Floras. Thus, we expect to find the productions of the Galapagos Archipelago on the higher levels of the Cordillera; and the mountains of St. Thomas, Fernando Po and the Cameroons, on the west coast of Tropical Africa, may yet exhibit to us the Botanical features of St. Helena. Outlying and high islands commonly partake in the peculiar vegetation of a climate cooler than belongs to the low lands of the adjacent continent; though, in the case of Juan Fernandez, they sometimes exhibit genera equally isolated in botanical affinities as their habitats are in geographical position.

Catalogue of the Plants collected in the Island of Madeira by the Botanist of the NIGER EXPEDITION; *to which are added those of the* ANTARCTIC EXPEDITION; *drawn up by* C. LEMANN, ESQ., M.D. Cantab. F.L.S. &c &c.

1. Ranunculus grandifolius, *Lowe.*—Ribiera Frio, *Vogel.*
2. R. repens, *Lowe.*—Ribiera Frio, *Vogel.*
3. Papaver dubium, *L.*—Curral, *Vogel.*
4. Fumaria media, *Loisel.*—Curral, *Vogel.*
5. Matthiola Maderensis, *Lowe.*—Funchal, *Vogel* & *J. D. H.*
6. Cheiranthus mutabilis, *L'Hér.*—Curral, *Vogel.*
7. Nasturtium officinale, *R. Br.*—Funchal, *J. D. H.*
8. Arabis albida, *Stev.*—Ribiera Frio, and Grand Waterfall, *Vogel.*
9. Cardamine hirsuta, *L.*—Grand Waterfall, *Vogel.*
10. Teesdalia Iberis, *DC.*—Grand Waterfall, *Vogel.*
11. Sinapidendron frutescens, *Lowe.*—Curral, *Vogel.*
12. Raphanus Raphanistrum, *L.*—Funchal, *Vogel.*
13. Viola Maderensis, *Lowe.*—Road to the Curral, *J. D. H.*
14. V. sylvestris, *Lam.*—Ribiera Frio and Grand Waterfall, *Vogel.*
15. Linum angustifolium, *Huds.*—Funchal, *Vogel* & *J. D. H.*
16. Malva parviflora, *L.*—Ribiera Frio, *Vogel.*
17. Sida carpinoides, *DC.*—Funchal, *J. D. H.*
18. S. rhombifolia, *L.*—Funchal, *J. D. H.*
19. Hypericum humifusum, *L.*—Funchal, *J. D. H.*
20. H. perforatum, *L.*—Funchal, *Vogel* & *J. D. H.*
21. H. glandulosum, *Ait.*—Curral, *Vogel.*
22. H. grandifolium, *Chois.*—Curral, *J. D. H.*
23. Erodium Botrys, *Bertol.*—Grand Waterfall, *Vogel.*
24. Geranium rotundifolium, *L.*—Curral and Grand Waterfall, *Vogel.*
25. Oxalis corniculata, *L.*—Funchal, *J. D. H.*
26. Mesembryanthemum nodiflorum, *L.*—Funchal, *J. D. H.*
27. Polycarpon tetraphyllum, *L. fil.*—Funchal, *Vogel, J. D. H.*
28. Cerastium glomeratum, *Thuill.*— Curral and Funchal *Vogel, J. D. H.*

29. Cerastium triviale, *Link.*—Curral, *Vogel*, *J. D. H.*
30. Stellaria uliginosa, *Murr.*—Curral, *Vogel*, *J. D. H.*
31. S. media, *Sm.*—Ribiera Frio, *Vogel.*
32. Silene Gallica, *L.*—Grand Waterfall, *Vogel.*
33. Ulex Europæus, *L.*—Ribiera Frio, *Vogel.*
34. Genista virgata, *DC.*—Curral, *Vogel*, *J. D. H.*
35. G. Maderensis, *Webb.*—Ribiera Frio, *Vogel.*
36. Lathyrus sphæricus, *Retz.*—Curral, *Vogel.*
37. Lotus glaucus, *Ait.*—Funchal, *J. D. H.*
38. Medicago tribuloides, *Lam.*—Funchal, *Vogel*, *J. D. H.*
39. Psoralea bituminosa, *L.*—Funchal, *Vogel*, *J. D. H.*
40. Vicia sativa, *L.*—Curral, *Vogel.*
41. Scorpiurus subvillosus, *L.*—Funchal, *Vogel.*
42. Ornithopus perpusillus, *L.*—Grand Waterfall, *Vogel.*
43. Cassia bicapsularis, *L.*—Funchal, *Vogel*, *J. D. H.* (introduced ?)
44. Acacia Farnesiana, *Willd.* — Funchal, *Vogel*, *J. D. H.* introduced ?)
45. Chamæmeles coccinea, *Lindl.*—East Coast, *Vogel.*
46. Alchemilla arvensis, *Scop.*—Ribiera Frio, *Vogel*, *J. D. H.*
47. Poterium verrucosum, *Ehr.*—Funchal, *Vogel*, *J. D. H.*
48. Fragaria vesca, *L.*—Ribiera Frio, *Vogel*; Curral, *J. D. H.*
49. Lythrum Græfferi, *Tenore.*—Curral, *J. D. H.*
50. Sempervivum glutinosum, *Ait.*—Funchal, *Vogel.*
51. S. villosum, *Ait.*—Curral, *Vogel*, *J. D. H.*
52. S. aizoides, *Lam.*—Funchal ? *Vogel.*
53. Umbilicus pendulinus ?—*Vogel.*
54. Saxifraga Maderensis, *Don.*—Curral, *Vogel.*
55. Bupleurum salicifolium, *Solander.*—Curral, *Vogel.*
56. Crithmum maritimum, *L.* *β.* latifolium.—East Coast, *J. D. H.*
57. Sambucus nigra, L.—Ribiera Frio, *Vogel.*
58. Galium Aparine, *L.*—Ribiera Frio, *Vogel.*
59. Sherardia arvensis, *L.*—Ribiera Frio, *Vogel*, *J. D. H.*
60. Phyllis Nobla, *L.*—Curral, *Vogel.*
61. Ageratum conyzoides, *L.*—Funchal, *J. D. H.*
62. Phagnalon saxatile, *DC.* ?—*Vogel.*

63. Eclipta prostrata, *L.*?—Funchal, *J. D. H.*
64. Bidens leucantha, *Willd.*—Funchal, *Vogel, J. D. H.*
65. Chrysanthemum pinnatifidum, *L. fil.*—Ribiera Frio, *Vogel.*
66. Artemisia argentea, *L'Hér.*?—*Vogel, J. D. H.*
67. Helichrysum obconicum, *DC.*—Sea-coast, *J. D. H.*
68. H. melanophthalmum, *Lowe.*—Grand Waterfall, *Vogel.*
69. Gnaphalium luteo-album, *L.*—Funchal, *Vogel, J. D. H.*
70. Calendula arvensis, *L.*—Curral, *Vogel, J. D. H.*
71. Galactites tomentosa, *Mœnch.*?—*Vogel.*
72. Tolpis pectinata, *DC.*—Funchal, *J. D. H.*
73. T. crinita, *Lowe.*
74. T. umbellata, *Bertol.*—Curral, *Vogel, J. D. H.*
75. Thrincia nudicaulis, *Lowe.*—Curral, *Vogel*; Funchal, *J. D. H.*
76. Sonchus ustulatus, *Lowe*, (leaves.)—South-east coast, *J. D. H.*
77. Campanula Erinus, *L.*—Curral, *Vogel, J. D. H.*
78. Centranthus Calcitrapa, *Dufr.*—Curral, *Vogel.*
79. Vaccinium Maderense, *Link.*—Ribiera Frio, *Vogel*; Pico Ruivo, *J. D. H.*
80. Erica arborea, *L.*—Curral, *J. D. H.*
81. E. scoparia, *L.*—Ribiera Frio, *Vogel*; Pico Ruivo, *J. D. H.*
82. Clethra arborea, *Ait.*—Ribiera Frio, *Vogel.*
83. Heberdenia excelsa, *DC. fil.* (leaves.)—Curral, *J. D. H.*
84. Sideroxylon Marmulana, *C. Sm.*—Funchal, *Vogel.*
85. Convolvulus althæoides, *L.*—?*Vogel.*
86. C. solanifolius, *Lowe.*—Ribiera Frio, *Vogel.*
87. Plantago Lagopus, *Hall.* α.—β. Lusitanica.—Grand Waterfall, β. Ribiera Frio, *Vogel.*
88. P. Coronopus, *L.*—Funchal, *J. D. H.*
89. P. arborescens, *Poir.*—South-east coast, *J. D. H.*
90. Globularia longifolia, *Ait.*—South-east coast, *Vogel*; Funchal, *J. D. H.*
91. Echium plantagineum, *L.*—Grand Waterfall, *J. D. H.*
92. E. fastuosum, *Jacq.*—?*Vogel.*
93. Myosotis repens, *Don.*—Ribiera Frio, *Vogel.*
94. Lavandula viridis, *Ait.*—Funchal, *Vogel, J. D. H.*

95. L. pinnata, *L. fil.*— ? *Vogel.*
96. Bystropogon punctatus, *L'Hér.*— ? *Vogel.*
97. Origanum virens, *Link.*—Curral, *J. D. H.*
98. Micromeria varia, *Benth.*—Curral, *J. D. H.*
99. Melissa Calamintha, *L.* *β.* villosissima, *Benth.*—Curral, *J. D. H.*
100. Prunella vulgaris, *Mœnch.*—Grand Waterfall and Ribiera Frio, *Vogel.*
101. Cedronella triphylla, *Mœnch.*—Grand Waterfall, *Vogel.*
102. Stachys hirta, *L.*—Curral, *Vogel.*
102. S. arvensis, *L.*—Curral, *Vogel.*
102. S. Betonica, *Benth.*— ? *Vogel.*
103. Clinopodium vulgare, *L.*—Curral, *Vogel, J. D. H.*
104. Sideritis Massoniana, *Benth.*—Curral, *Vogel.*
105. Teucrium abutiloides, *L'Hér.*—Curral, *J. D. H.*
106. Lantana aculeata, *Ait.*—*J. D. H.*
107. Antirrhinum Orontium, *L.*—Grand Waterfall, *Vogel.*
108. Sibthorpia peregrina,— ? *Vogel.*
109. Veronica acinacifolia, *L.*—Ribiera Frio, *Vogel.*
110. V. Anagallis, *L.*—Curral, *Vogel.*
111. V. arvensis, *L.*— ? *Vogel.*
112. Odontites Holliana, *Benth.* (fruit.)—Ribiera Frio, *Vogel.*
113. Physalis pubescens, *L.*—Funchal, *Vogel, J. D. H.*
114. Hyoscyamus Canariensis, *Ker.*—Funchal, *J. D. H.*
115. Vinca major ? not wild.—Funchal, *Vogel.*
116. Olea (Phillyrea, *D.C.*) Lowei, *DC.*—Maritime spots, *J. D. H.*
117. Jasminum odoratissimum, *L.*—Funchal, *Vogel.*
118. Chenopodium ambrosioides, *L.*—Funchal, *J. D. H.*
119. Suæda laxifolia, *Lowe.*—East coast, *J. D. H.*
120. Rumex Maderensis, *Lowe.*—Curral, *Vogel.*
121. R. Acetosella, *L.*— ? *Vogel.*
122. R. aculeatus, *L.*—Curral and Ribiera Frio, *Vogel.*
123. Polygonum maritimum, *L.*—East coast, *J. D. H.*
124. Mercurialis annua, *L.* var. *β.* (M. ambigua, *L. fil.*)—Funchal, *Vogel, J. D. H.*
125. Euphorbia Peplus, *L.*—Funchal, *Vogel, J. D. H.*

126. E. hypericifolia, *L.*—Funchal, *Vogel, J. D. H.*
127. Persea Indica, *Spr.*—Curral, *Vogel, J. D. H.*
128. Oreodaphne fœtens, *Nees.*—Ribiera Frio, *Vogel.*
129. Apollonia Canariensis, *Nees.*—Ribiera Frio, *Vogel.*
130. Myrica Faya, *Mx.*—Mr. Veitch's garden, *J. D. H.*
131. Parietaria Lusitanica, *L.*? (P. Maderensis, *Rchb.*)—Funchal, *J. D. H.*
132. Ephedra alata, *Dcne.*—Funchal, *J. D. H.*
133. Peristylus cordatus, *Lindl.*— ? *Vogel.*
134. Himantoglossum secundiflorum, *Lindl.*—Ribiera Frio, *Vogel.*
135. Amaryllis Belladonna, *L.*—Road to Curral, *J. D. H.*
136. Ruscus Hypoglossum, *L.*— ? *Vogel.*
137. Commelina communis, *L.*—Funchal, *J. D. H.*
138. Juncus glaucus, *Sm.*— ? *Vogel.*
139. J. triformis, *L.*—Grand Waterfall, *Vogel.*
140. Isolepis Saviana, *Schult.*—Grand Waterfall, *Vogel.*
141. Carex divulsa, *Gooden.*—Curral, Grand Waterfall, Ribiera Frio, *Vogel.*
142. Panicum vaginatum, *Swtz.*—Funchal, *J. D. H.*
143. P. repens, *L.*—Funchal, *J. D. H.*
144. Pennisetum cenchroides, *Rich.*—Funchal, *J. D. H.*
145. Lagurus ovatus, *L.*—Curral, *Vogel.*
146. Cynosurus echinatus, *L.*—Ribiera Frio, *Vogel.*
147. C. elegans, *Desf.*—Ribiera Frio, *Vogel.*
148. Dactylis glomerata, *L.*?— ? *Vogel.*
149. Melica ciliata, *L.*—Curral and Grand Waterfall, *Vogel.*
150. Poa megastachya, *Koel.*—Funchal, *J. D. H.*
151. Briza minor, *L.*—Grand Waterfall, *Vogel.*
152. B. major, *L.*—Curral and Ribiera Frio, *Vogel, J. D. H.*
153. Aira præcox, *L.*—Grand Waterfall, *Vogel.*
154. A. caryophyllea, *L.*—Ribiera Frio, *Vogel.*
155. Avena hirtula, *Lag.*—Curral, *Vogel.*
156. Bromus maximus.—Curral, *Vogel.*
157. Festuca bromoides, *L.*—Curral, Grand Waterfall and Ribiera Frio, *Vogel, J. D. H.*
158. Festuca jubata, *Lowe.*—Curral, *Vogel.*

159. Andropogon Halepensis, *Sibth.*—Funchal, *J. D. H.*
160. A. hirtus, *L.*—Funchal, *Vogel, J. D. H.*
161. Polypodium vulgare, *L.*—Curral, *Vogel.*
162. Gymnogramma Lovei, *Hook.* and *Grev.*—Ribiera Frio, *Vogel.*
163. Notholæna lanuginosa, *Desv.*—Funchal, *J. D. H.*
164. Grammitis Ceterach, *L.*—Funchal, *Vogel, J. D. H.*
165. Adiantum reniforme, *L.*—? *Vogel.*
166. A. Capillus Veneris.—Funchal, *Vogel, J. D. H.*
167. Pteris aquilina, *L.* — Curral and Ribiera Frio, *Vogel, J. D. H.*
168. P. arguta, *Vahl.*.—Ribiera Frio, *Vogel.*
169. Lomaria Spicant, *Desv.*—Grand Waterfall, *Vogel.*
170. Athyrium Filix-fœmina, *Roth.*—Ribiera Frio, *Vogel.*
171. Asplenium Adiantum-nigrum, *L.* (A. *productum,* Lowe). Curral, *Vogel;* Funchal, *J. D. H.*
172. A. monanthemum, *Sm.*—Ribiera Frio. *Vogel.*
173. A. anceps, *Soland.*—Curral, *Vogel.*
174. A. palmatum, *Swtz.*—Ribiera Frio, *Vogel.*
175. Cystopteris fragilis, *Bernh.*—Funchal, *Vogel, J. D. H.*
176. Nephrodium molle, *Br.*—Funchal, *J. D. H.*
177. Aspidium angulare, *Sm.*—Curral, *Vogel.*
178. A. elongatum, *Swtz.*—Ribiera Frio, *Vogel.*
179. A. falcinellum, *Swtz.*—Ribiera Frio and Curral, *Vogel, J. D. H.*
180. Davallia Canariensis.—Ribiera Frio and Curral, *J. D. H.*
181. Lycopodium denticulatum, *Willd.* — Curral, *Vogel, J. D. H.*

TENERIFFE.

The next point visited by the Niger Expedition, after leaving Madeira, was the island of Teneriffe: where the vessel in which Vogel had embarked remained but a few hours. The same island, and the same port, Santa Cruz, had been touched at by the Antarctic Expedition during the previous winter. Teneriffe is always held to be classic ground by the Naturalist, as the opening scene of the labours of Humboldt, who there first appreciated in their full extent the laws governing the geographical distribution of plants. His life-like pictures of the natural phenomena, observed during an ascent of the famous peak, have given to many succeeding scientific travellers that impulse which has turned their thoughts and steps from closet studies and the pursuit of Natural History at home, and induced them to seek far distant scenes, in the West, the East and the South.

The Peak itself is seldom descried: one hurried glimpse of its very apex, from upwards of sixty miles' distance, was all we obtained: it then appeared like a little short and broad cone high in the clouds, or rather as an opaque triangular spot on the firmament. It is difficult to imagine this, the culminant point, to be that mighty mass, at whose base the toil-worn traveller pauses; when, having surmounted four-fifths of the mountain, his heart quails at beholding a "Pelion upon Ossa piled" so stern, so stony and so steep.

Much and deeply did the officers of Captain Ross' and Trotter's Expeditions deplore the necessity of hurrying from this spot, most interesting to the sailor; being the point to which every circumnavigator first steers, and from whence, with chronometers carefully corrected at its well-determined position, he takes his departure. For years, too, this was the prime Meridian: distance in longitude at sea being reckoned from Teneriffe as zero, by all the seafaring nations of Europe at one period; and by some it is so still. From the days of the earliest circumnavigators, to the present, "we sighted the Peak of Teneriffe" marks that page in the narrative, at which all that is interesting in the voyage commences.

In the history of geology, the Canary Islands hold a conspicuous position: Von Buch developed his theory of craters of elevation from what he there observed: his name too recalls, and most appropriately, that of his fellow-labourer in the same shores, Christian Smith, the amiable and gifted Swede, who first after Humboldt explored their Botany. Christian Smith returned to Europe to embark in the ill-fated Congo Expedition: when he again saw the Peak of Teneriffe, he welcomed it as a familiar object, and bade it adieu, rejoicing that a still more novel field of inquiry was opened to him, beyond this scene of his early exertions. A few short months terminated his life and hopes: like Vogel, he fell a victim to the dread fever of the pestilential coast of Africa: like him, too, he was a martyr in the cause of Botanical Science.

Possessed of so many and such touching associations, no naturalist-voyager can see the Fortunate Isles rising, one by one, on the horizon of the mighty Atlantic, without some feeling of melancholy, while reflecting on the fate of these his two predecessors, both most accomplished Naturalists of their age and day; and whose prospects and hopes were in every respect as bright, perhaps brighter, than his own.

The excellent and beautiful work of Mr. Webb, on the Natural History of the Canaries, leaves little to be said, especially of their Botany; and renders even an enumeration of the few species gathered by Vogel and the Botanist of the Antarctic Expedition unnecessary; for they were all collected within a very few miles of Santa Cruz, during a very hurried walk, and scarcely include a dozen kinds. This locality is one of the most barren of the whole group, especially in the immediate neighbourhood of the sea. The broad frontage of cliff and mountain, reaching upwards for several thousand feet above the town, and fore-shortened to the view from seaward, presents a progressive increase of verdure from the water's edge to the mountains. At this season, when the vines are out of leaf, nothing green meets the eye; the trees, either isolated or in very small clumps, only dot the alternate ridges and steep gullies with which the slopes are everywhere cut like the edge of a saw, producing that spotty effect in the landscape so admirably transferred to the phytographical illustrations of the work alluded to, and which is eminently characteristic both of the Canaries and Madeira.

The *Kleinia, Euphorbia* and *Plocama* are three plants which the voyager recognizes long before reaching the shore;

and they are so singular, whether as regards habit, habitat, or botanical characters, that the opportunity of seeing them in a wild state, even from the sea, must be deemed a privilege by the Botanist.

CAPE DE VERD ISLANDS.

The voyage, from the Canaries to the Cape de Verd Islands, generally presents a hiatus in the journals of those sea-faring Naturalists who have followed this route. Before arriving at the Canaries, landsmen have scarcely recovered from the novelty of ship-board and its effects; nor has there been time, since leaving these islands, to become thoroughly inured to the monotony of a sailing life. At first sight, the Cape de Verd Islands are very disappointing. It is true that we had passed from an extra-tropical latitude to far within the tropics; but the change in position was not accompanied with a corresponding difference, still less with luxuriance, in the vegetation and scenery. Yet these apparently barren islands have associations of great interest; and their examination yields both pleasure and profit. They afforded us the first glimpses of the fever-smitten coast of Africa, and of slavery. Even the black man here, deprived of freedom, and an alien to the land in which, though guiltless, he is a prisoner for life, is apt to be regarded as a mere object of Natural History by his Caucasian fellow-creature; who, before he has time for reflection, may perhaps be excused for pausing to consider, whether a being so different in features and social position, be really of the same origin as himself; whether, in short, the poor African is a race of the same stock, or a species apart.

There are many other circumstances, connected with these islands, calculated to keep the mind busy while in their neighbourhood. They form the western extreme of the Old World, of what was the whole world to civilized man, till within the last very few hundred years; and hence these, the North Cape and Cape of Good Hope, constitute the three salient points in the geography of the eastern Atlantic.

In many of their physical features, they form a continuation of the great Sahara desert; that mysterious blank on our maps, upon whose sea of sand so many of our venturesome countrymen have embarked, to be heard of no more. The hitherto unexplored mountains rise 8000 feet and upwards above the sea, in serried ridges and isolated peaks, promising a rich harvest to some Botanist, who may in these higher and cooler parts of the islands rely on immunity from disease and a temperate climate. There he may expect to find new types of plants; for the Mountain Flora of Western Tropical Africa is wholly unknown; and of its probable nature even we can form no guess. To conclude, the Linnæan axiom of "semper aliquid novi ex Africa" has never yet proved false. A Naturalist cannot see the shores of that continent without feeling that no other spur is required to exertion, in a field to which such a motto still applies with so much force.

(The Plants of this Voyage have proved so numerous, that it has been deemed advisable to form a separate volume of them, which is now publishing by Mr. Baillière under the title of "The Botany of the Niger Expedition.")—Ed.

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*Observations sur l'*AMOREUXIA, *DC.* (Euryanthe, *Cham. et Schlecht.*) *et description des nouveaux genres* ROUCHERIA *et* LOBBIA: *comme introduction à des mémoires distincts sur les* COCHLOSPERMÉES, LINÉES *et* ARISTOLOCHIÉES, *familles auxquelles ces genres seront respectivement rattachés, par* J. E. PLANCHON, *Docteur-ès-Sciences.*

(*Avec trois planches,* TAB. I. II. III.)

La nécessité de suivre dans l'explication des planches de ce journal un ordre constant et régulier, m'oblige à présenter provisoirement, sous un même titre, des fractions strictement séparables de trois mémoires qui n'ont entr'eux rien de commun. Les botanistes ne perdront rien à cette irrégularité apparente; les détails auxquels je me borne ici étant purement tech-

niques, c'est à dire, une partie du lourd bagage dont la science est obligée de se faire suivre, que l'on use seulement au temps du besoin, et dont on pourrait presque se passer, grace aux excellentes figures qu'il me reste à expliquer.

AMOREUXIA, *Moc. et Sessę, ex DC. prod.* 1. *p.* 638.

Euryanthe, *Cham. et Schlecht. in Linn.* 5. *p.* 225.

Calyx 5-partitus, laciniis oblongis, subæqualibus, erectis, marginibus imbricatis. Petala 5, obovata, tenera, fugacia, æstivatione contorta. Stamina indefinita, hypogyna. Filamenta libera, filiformia; alterius lateris fere duplo longiora et crassiora. Antheræ basifixæ, rectæ, dorso et facie complanatæ, biloculares, loculis sub apice rimula introrsa apertis. Ovarium ovatum, obtuse trigonum, triloculare, placentis axilibus multiovulatis. Stylus fistulosus, ore minutissime denticulato stigmaticus. Capsula ..... Semina reniformia; testa nitida, lævi; embryo. . . .

Herbæ Mexicanæ et Novo-Granatenses, habitu *Malvoideo*; e tubere crasso lignoso, superficie irregulari, corticoso, caulem humilem basi vix induratum, sub anthesi foliatum exserentes. Folia alterna, longe petiolata, ambitu cordato-orbicularia, digitato-partita, laciniis spathulatis, irregulariter subduplicato-serratis, pinnatim venosis; stipulæ lineares, deciduæ. Racemi terminales, demum evolutione gemmæ axillaris oppositifolii; v. rarius pedunculi solitarii folio oppositi? (*DC.*) Pedicelli secundi, sigmoideo-curvati, bracteati. Flores quam ei *Cochlospermorum* minores, speciosi, flavi, eos *Bieberstenicæ odoræ* referentes.

1. Amoreuxia *Schiedeana*, (Tab. nostr. I. sub nomine A. palmatifidæ.)—*Euryanthe Schiedeana*, Cham. et Schlecht, l. c.—*Amoreuxia palmatifida*, Planch. supra in icon. I.—an DC.?—A. racemis paucifloris, pedunculis secundis subsigmoideo-incurvis, ascendentibus.

HAB. in Mexico, inter Marantial et Paso de Oveyas.—*Schiede*, ex Cham. et Schlecht.—ad Senora Alta, *Dr. Coulter*, n. 789 in herb. Hook. nec non in planitie Ibaguensi pro-

vinciæ Mariquita, regni Novo-Granatensis (stirps cujus figura huc præstat.) *Purdie* in herb. Hook.

TAB. I. *Amoreuxia Schiedeana*, Planch. (sub nom. A. *palmatifidæ.*) Planta magnitudine naturali, caulis parte superiore ab inferiore tuberi oblongo continua excisa; *f.* 1. Flos apertus, petalis ablatis; *f.* 2. Petalum magnitudine naturali; *f.* 3. Staminum pars summa amplificata; *f.* 4. Pistillum; *f.* 5. Ovarii sectio transversa.

2. Amoreuxia *palmatifida*, Moc. et Sesse, ex DC. l. c.; A. pedunculis solitariis, unifloris, oppositifoliis, erectis, apice inflexis.

HAB. in Agro Mexicano.—*Moc. et Sesse.*—*Ruiz* in herb. Lambert. ex DC.

OBS. L'excellente description que Chamisso et Schlechtendal ont donné de leur *Euryanthe Schiedeana* m'avait permis d'y rapporter une plante de la Nouvelle Grenade; détermination qui s'est pleinement confirmée par la vue de la même espèce dans la collection mexicaine du docteur Coulter. Cette identité une fois bien constatée, on peut douter si le caractère d'inflorescence attribué à l'*Amoreuxia palmatifida* ne tient pas à l'état imparfait des échantillons types de cette espèce. J'avais d'abord résolu la question dans ce sens, comme le prouve le nom inscrit au bas de la planche qui représente l'*Amoreuxia Schiedeana.* Je me décide pourtant à rétracter ma première opinion, en attendant qu'on ait décidé, sur des preuves, le degré de confiance que méritent dans ce cas les dessins inédits qui ont servi de type à l'espèce originale.

ROUCHERIA, gen. nov.

Calyx 5-partitus, laciniis erectis, æstivatione marginibus imbricatis. Petala 5 anguste obovata, flabellato-venosa, tenera, fugacia, æstivatione convoluta. Stamina 10, alternatim breviora, inclusa; filamentis complanato-subulatis, inferne in tubum connexis; antheris ovatis, bilocularibus, loculis rima introrsa dehiscentibus. Glandulæ 10, lutescentes, in annulum substantiæ tubi staminei innatum confluentes. Ovarium ovatum, 3-5-loculare, loculis sub apice anguli interni 1 ?-2-ovulatis. Ovula anatropa, collateralia, pendula. Styli 3-5, filiformes. Stigmata cuneato-biloba. Nucula subexsucca, 5 v. abortu 3-1-locularis. Semina (immatura) compressa, perfecta forsan alata, inversa.

Frutices Guyanenses et Indici! elegantes, glaberrimi. Folia alterna, distiche patentia, in petiolum angustata, oblongo-lanceolata, obsolete v. conspicue glanduloso-serrulata; juniora, more *Erythroxyli* v. *Humirii*, in gemma nuda margine utroque involuta, evolutione semiperacta in longum 5-plicata, vernicoso-lucida, axillis resinifluis, marginibus glandulis minutissimis caducis obsitis. Nervi laterales nunc innumeri, striiformes, sibi invicem paralleli, e nervo medio angulo fere recto patentes, versus marginem folii in nervulum undulatum connexi: nunc inter se magis distantes, alterisque crassiusculis, rectis, tenuioribus commixtis: interdum pauciores, curvato-ascendentes, venis transversis connexi. Stipulæ laterales, liberæ, minutæ, caducissimæ. Fasciculi axillares v. foliorum casu nudati, densissime contracti, inter flores sessiles bracteolati; rarius corymbuli in paniculam brevem terminalem collecti, ramis compressis, hinc illinc confertiuscule divisis: pedicelli breves, cito ebracteati. Flores pallide flavi.

I. Roucheria *calophylla*, foliis oblongo-lanceolatis, acute cuspidatis, tenuissime serrulatis; nervis lateralibus striiformibus; fasciculis florum petiolo 2-3 lineari vix longioribus. (TAB. II.)

HAB. In Guiana Anglica, Cl. *Schomburgk*, n. 988 in herb. Hook.

Frutex v. arbor facie *Humirii*. Rami teretes, epidermide lævi, nigrescente, punctis v. striis verticalibus albis adspersa. Ramuli distiche patentes, non raro fasciculum florum concomitantes. Folia pulcherrima, chartacea, siccitate nigrescenti-æneа, transverse secus nervulos fissilia, margine obsolete crispula et sub lente obtuse serrulata; bracteæ minutæ, sicut foliola calicis, tenuissime puberulæ; styli numero varii, sæpius 4-5.

TAB. II. Ramus floridus magnitudine naturali. *f.* 1. Flores duo, altero inaperto, cum bracteolis calycem stipantibus;

f. 2. Flos, petalis ablatis; *f.* 3. Staminum adelphia, pistillum includens; *f.* 4. Ovarium casu (non raro) tristylum.

2. R. *Griffithiana*; foliis lanceolatis, abrupte acuminatis, obtuse serratis; nervis secundariis paucis, arcuatis; fasciculis paucifloris, brevissimis, in axillis foliorum v. secus ramulos denudatos compressos sessilibus; nuculis ovatis, abortu unilocularibus, monospermis.

Hab. In Indiæ superioris prov. Khasya, inter 20° et 26° lat. bor. non procul a radicibus montium Himalaya, *Griffith* in herb. Hook.

Rami adulti teretes; juniores compressi, stricti, patentes, epidermide tenuissima, alba, cito detersa, corticem lævem rubescentem nudante. Folia basi acuta, in petiolum gracilem 3 lin. longum attenuata, 2-2½ poll. longa, 10-14 lin. lata, supra nitida, fuscescentia, subtus pallidiora; textura tenui sed rigida; nervis utrinque prominulis. Axillæ petiolorum sæpius resiniflux. Flores 7-8 in fasciculum ramo quasi semi-immersum conglobati. Petala angusta, fugacissima. Nucula ovata, piso minor, subdrupacea; nucleo extus verticaliter striato; loculis 3-4 effœtis, unico semen compressum (imperfecte evolutum) fovente.

Sp. floribus ignotis, subdubia.

3. Roucheria *humiriifolia*; foliis oblongis, in petiolum vix pollicarem decurrentibus, breve acuminatis, margine crispulo obtuse serrulatis; paniculis terminalibus, foli brevioribus, ramis compresso-angulatis; pedicellis brevissimis nodiformibus; nuculis ovatis, nigro-cœruleis, multistriatis, calyci minuto persistenti insidentibus.

Formæ duo exstant, *prima*: foliis apice obtusis, acumine brevi, abrupte complicato, sphacelato terminatis, utrinque pallidis. *Altera*: foliis in acumen longiusculum acutum sensim productis, subtus fuscis.

Hab. In Cayenna, *Cl. Martin*, in herb. Hook.

Frutex v. arbor, facie *Humirii Guyanensis*, Benth. Rami teretes, inferne denudati. Folia sparsa, patentia, 3½-5 poll. longa, 1½-2 poll. lata, chartacea, nitida; nervo medio supra impresso, subtus acute elevato; lateralibus tenuibus, patentibus, fere rectis, inter se modice distantibus, aliis tenuissimis, striiformibus, eis parallele interjectis. Petioli limbi decurrentia infra medium marginati, supra canaliculati, ima basi rubescente resiniflui. Stipularum cicatrices punctiformes, albæ. Paniculæ vix 2-pollicaris rami 4-5, a basi distincti, stricti, compressi, hinc inde ramulos iterum confertiuscule divisos emittentes. Pedicelli brevissimi, cylindraceo-nodiformes, strato carnosulo obsolete costato corticati. Laciniæ calycinæ (sub fructu) in cupulam rotatam dispositæ, basi marginibus imbricatæ, vix 1 lin. longæ, subrotundæ, obtusæ, cereaceæ, hyalinæ, *pellucido-punctatæ!* Nucula subbaccata, magnitudine grani piperis, apice stylulis 5 ad basim distinctis coronata; nucleo duro, 1-5-loculare, septis tenuibus, completis. Semina in loculo singulo 2, pendula, immatura lateribus compressissima, perfecta verosimiliter in alam expansa.

Je désire attacher à ces belles plantes le nom d'un compatriote, l'auteur infortuné du pöème des Mois. A une époque où la vertu était un titre pour l'échafaud, Roucher trouvait dans les fleurs que lui apportait sa fille, un soulagement aux horreurs d'un cachot révolutionnaire. C'est un droit chèrement acquis, d'entrer dans le cercle des adeptes de Flore, à côté de l'inimitable Jean-Jacques et du trop rêveur, mais sensible et poétique auteur des *Etudes de la Nature.*

LOBBIA, gen. nov.

Flores hermaphroditi. Perianthii tubus gracilis, tetragonus, ovario adhærens; limbus urceolato-campanulatus, regularis, basi intrusus, parte infera semi-globosa, fauce annulo prominulo limitata; supera latiore, triloba, lobis brevibus, latis, æstivatione valvatis. Stamina 16-18, circa styli brevis basim inserta, obscure biseriata. Filamenta a basi libera, crassiuscula, stigmatibus breviora. Antheræ oblongæ, biloculares; loculis dorso connectivi filamento plane continui adnati, r i verticali extrorsum dehiscentes. Stylus supra basim crassam, abbreviatam, in ambitu staminiferam, in crures 5-6, subulatas, staminibus longiores, apice stigmaticas? divisus. Ovarium lineare, utrinque attenuatum, obsolete 4-sulcum, 4-loculare. Ovula anatropa, in loculo quoque uniseriata, adscendentia, versus medium septi (nec angulo interno loculi) affixa; seriebus asymmetrice dispositis: nempe 2 loculorum adjacentium sibi invicem oppositis, 2 contra in loculis adjacentibus sibi parallelis. Fructus . . . . verosimiliter capsula 4-valvis ut in *Bragantia*.

Frutex habitu piperaceo, scandens, sarmentosus, glaberrimus. Rami teretes, læves, medullosi: ramuli inter folia subgeniculato-flexuosi. Folia disticha, brevissime petiolata, exstipulata, oblonga, acute cuspidata, mucronulata, chartacea, siccitate fragilia, obscure triplinervia, cæterum laxe penninervia, inter nervos secundarios arcuato-adscendentes reticulata. Spicæ e sarmentis, ad cicatrices veterum foliorum, dependentes, vix 2-pollicares, rachi compressa, subdilatata, crebre flexuosa; bracteæ lineares, breves, ad latus alterum floris subsessilis solitariæ. Ovarium junius pedicellum simulans, perianthii limbum brunneo-rubentem, nervosum, subæquans.

Sp. unicam quæ: Lobbia *dependens* (Tab. III.) in insula Singapore leg. cl. *Thom. Lobb.* Sicc. in herb. Hook. sub n. 289 coll. Lobbianæ.

Le nom de cette remarquable plante rappellera les deux frères William et Thomas Lobb, dont le zèle infatigable a enrichi les serres de M. Veitch comme l'herbier de Sir W. Hooker de plantes dont la science aura son profit. M. William Lobb a étendu ses recherches depuis Rio de Janeiro jusqu'à Buenos Ayres, de là au sud du Chili et Chiloé, enfin dans la plus grande partie de la Colombie jusqu'à ses limites septentrionales. M. Thomas Lobb, de son côté, a levé sur la végétation de Singapore et de Java un tribut dont on pourra juger la richesse par la liste d'une partie de ses plantes qui sera continuée dans ce Journal, et mieux

encore par les beaux sujets que plusieurs d'entr'elles ont déjà fourni au *Botanical Magazine* et au *B. Register*.

Quant aux affinités de la plante, je dois me borner ici, par les raisons avancées plus haut, à indiquer ses rapports intimes avec le *Bragantia* et le *Thottea*.

TAB. III. explan. Sarmenti floriferi pars, ramulique foliati fractio, magnitudine naturali. *Fig.* 1. Flos vix ac ne vix amplificatus; *f.* 2. Idem sectione laterali apertus; *f.* 3. Stylus (incuria pictoris seriam unicam cicatricum insertionis staminum exhibens); *f.* 4. Sectio transversa ovarii; *f.* 5. Eadem verticaliter secta.

On the Economy of the Roots of THESIUM LINOPHYLLUM; *by* WILLIAM MITTEN, ESQ.

(*With a Plate*, TAB. IV.)

The remarkable nature of the root of *Thesium linophyllum* has apparently hitherto altogether escaped attention. Indeed, from the general appearance of the plant, there is nothing to excite suspicion; nor will there be any trace left of its parasitical attachment to the roots of surrounding plants; unless the roots are taken up with the greatest care. The very brittle roots of the *Thesium* itself, and the closely interwoven roots of the many plants which compose the turf of the chalk hills, render the extrication of a perfect specimen a labour requiring no small degree of patience. The root of *Thesium*, after descending into the turf for about an inch, becomes repeatedly divided, and spreads for many inches in various directions; it is nearly white, and thus contrasts strongly with the dark epidermis of the roots of the generality of its supporters. On coming in contact with the root of its future support the root of *Thesium* produces a hemisphærical tubercle, which firmly fixes itself; while from its centre protrudes a tongue-like process (spongiole) which penetrates into the very heart of its supporter, often causing very considerable derangement in its tissues. After the perfection of the first tubercle, the root is continued from the side of the tubercle, so as to give it the appearance of having been formed laterally, and proceeds at greater or less intervals to form more tubercles in the same manner on the same or neighbouring roots. On the larger roots of its supporters it is not usual to find more than one or two tubercles; and these are mostly large: the largest I have seen being about the eighth of an inch in diameter; but on the fibrous roots of grasses and other small plants they are very small, and may be frequently found succeeding each other so quickly as to resemble a small string of beads.

Like *Cuscuta*, our species of *Thesium* appears to be by no means particular in the selection of its supporters; and I have ascertained its attachment to the roots of the following plants, viz.: *Anthyllis vulneraria, Thymus Serpyllum, Lotus corniculatus, Daucus Carota, Scabiosa succisa, Carex glauca,* and some grasses: it is probable that a single plant of *Thesium* subsists, at the same time, on the roots of the whole of the plants above enumerated.

Through the kindness of Mr. Borrer I have been able to examine the specimens published in Reichenbach's *Flora Exsiccata*; and I find the roots of *Thesium alpinum*, Linn., T. *ebracteatum*, Hayne, T. *rostratum*, Koch, and T. *linophyllum*, Linn., to have precisely the same structure as that of our own species. Unfortunately the roots of the other species contained in this collection were too imperfect to afford any information; but from the very close relationship of all the European species, there is good ground to infer that they are all of the same parasitical nature. It is however very probable that some species will be found to grow only in the society of certain plants, or to have a preference for one in particular. I mention the T. *linophyllum*, Linn., contained in the *Flora Exsiccata*, on account of its different aspect from any specimens I have gathered. It is probable that the Linnæan T. *linophyllum* contained more than one species; and hence may have arisen some confusion. Our own species I suppose to correspond with the T. *intermedium*, Schrad. of Koch's Synopsis; and with the var. *β. fulvipes* there described. Some of the specimens agree.

Although in its full-grown state *Thesium linophyllum* is evidently parasitical, it presents several characters at variance with those required by a true parasite; and at the conclusion of some experiments in which I am at present engaged, I hope to make some addition to its history as well as to that of *Cuscuta.*

TAB. IV. *Fig* 1. represents the root of *Thesium linophyllum* attached to the roots of its supporters; *f.* 2. A *slightly magnified* tubercle attached to a large root; *f.* 3. A longitudinal section of a tubercle, shewing the spongiole inserted into the root of *Lotus corniculatus*; *magnified*; *f.* 4. A transverse section of the same parts; *magnified.*

New LICHENS, *principally from the Herbarium of* SIR WILLIAM J. HOOKER; *by* THOMAS TAYLOR, M.D.

LECIDEA, *Ach.*

1. L. *crystallifera,* Tayl.; crusta cornea, squamosa, concava, cinerascenti, solidangulato-rimosa, subtus nigrescenti; apotheciis majoribus, substipitatis, atro-glaucescentibus, marginem tenuem demum excludentibus.

HAB. On sandy clay; Swan River; *Mr. James Drummond.*—Scales crowded, their surface composed of semipellucid, very pale brown, solid-angular pieces; beneath there is a layer of greenish granules, resting on a layer of snow-white, dense matter, which likewise rising up in certain spots, forms the obconical stipes of the apothecium. Disk of the apothecia dark and glaucous: lamina pale brown, vertically striated. In very young apothecia the white substance appears as a thin border. The thallus is unlike that of any of the *Lepidomæ* of Acharius.

2. L. *glauca*, Tayl.; thallo granulato, granulis majoribus, confertis, subrotundis, subrugosis, albis; apotheciis atris, convexiusculis, subconfluentibus, disco pruinoso, margine undulato, nigerrimo, demum excluso.

Hab. Swan River; on clay; *Mr. James Drummond.*—The grains of the thallus are tumid, subangulate, but scarcely lobate. A vertical section of the apothecium shews a thin pellucid lamina which is striated; the disc beset with dark points, the emerging summits of the thecæ, and the lamina resting on a thick layer of black matter. This is principally distinguished from L. *confluens*, Ach. by the more rotundate and convex thallodal scales, as well as by the absence of any black substratum..

3. L. *multiflora*, Tayl.; thallo granulato, granulis minutissimis, confertis, subrotundis, tumidis, subrugosis, albidis, demum in gemmas pulveraceas, fusco-olivaceas erumpentibus; apotheciis minutis, aggregatis, subsessilibus, siccitate atris, madore rufo-fuscescentibus, disco scabro, convexo, margine crasso, vix elevato.

Hab. On bark; Swan River; *Mr. James Drummond.*—Thallus extended, creeping, without any distinct border, when dry of so dark an olive colour that the apothecia are not to be distinguished by the naked eye: the young thallus whitish. A vertical section of the lamina shows under a dark primrose disc a rather thick, striated rufescent layer resting on whitish cortical matter of the thallus. L. *scabrosa*, Ach., is larger in all its parts, and has very conspicuous apothecia, whose lamina is bluish and rests on brown matter.

4. L. *lateritia*, Tayl.; thallo subtus nigro-tomentoso, squamuloso, squamis sparsis, citrinis aurantiacisque lobatis, lobis minutissimis; apotheciis rubro-aurantiacis, siccitate concavis, urceolatis, madore convexiusculis, margine tenui, pallidiori, undulato crenatoque.

Hab. On rocks; Swan River; *Mr. James Drummond.*—This differs from *Lecanora elegans*, Ach., by its tomentose inferior surface. The apothecia are much larger than the thallodal scales.

5. L. *humigena*, Tayl.; thalli substrato cuticuloso, gelatinoso, albido; verrucis sparsis, subhæmisphericis, minutissime tuberculatis, fuscis; gemmis granulatis, confertis, minutis, oblongis, subangularibus; apotheciis virescentibus, hæmiphericis, subpellucidis, pallide brunneis, immarginatis, disco scabrido.

HAB. On wet clay banks; Dunkerron; County of Kerry.—Patches two inches wide, to the naked eye of an obscure green. Warts exteriorly shining and dark brown, interiorly pale and pellucid, very rugged, with opaque prominences, which are larger than the buds. Disc of the apothecia subrugose, pellucid, the lamina rather shallow, very pellucid, strongly striated, resting on pale brown pellucid cellular matter. This can scarcely be confounded with L. *vernalis*, Ach. On a gelatinous substratum are fixed both the warts and the buds, also unconnected, either of them, the apothecia. These, again, are without any margin; indeed without any distinct tunic to contain the lamina.

6. L. *icterica*, Tayl.; thallo pulverulento, citrino, tenuissimo, demum nigricante, substrato albo; apotheciis numerosis, minutis, sparsis, vitellinis, disco convexiusculo, margine pallidiori, integro.

HAB. On limestone; Dunkerron; county of Kerry.—Thallus conspicuous in pale yellow, soft, thin, powdery patches one or two inches wide; apothecia scarcely visible to the naked eye. Approaches to *Lichen erythrellus*, Engl. Bot.; the thallus, however, is much thinner, more powdery, of a livelier yellow colour, and is bordered by the white projecting substratum; the apothecia are always more minute. Watched for more than twenty years, it is true to the above characters.

7. L. *Kaleida*, Tayl.; thalli substrato tenui atro, squamis minutis, planis, subrotundis, sublobatis, virescentibus, sub-

pruinosis; apotheciis immersis, disco nigro-pruinoso, margine tenui, demum obsoleto.

Hab. On transition rocks facing the south; Dunkerron, County of Kerry.—Patches two inches or more wide; when wet the substratum and scales become very distinct; when dry appearing as a confused dusky greenish-grey powder. The scales on which the apothecia are fixed are by far the largest. Dissection shews beneath a browish-black disc a shallow semipellucid, striated brown lamina, resting on much opaque brown matter.

8. L. *endochlora*, Tayl.; thalli squamis confertis, incrassatis, angulato-rotundatis, demum convexis, albis, intus viridi-flavicantibus, marginatis, periphericis radiato-lobatis; apotheciis sessilibus, minutis, disco rufescenti, margine pallidiori, demum excluso.

Hab. On sand; Mendoza; *Gillies, Hook. herb.* — Scales crowded, minute, white except where the cuticle is abraded, where they are yellowish-green. Lamina reddish-brown, paler than the disc. This species would rank among the *Psoræ* of Hoffmann.

9. L. *emergens*, Tayl.; crusta tenui, leproso-membranacea, pallide rufescenti-lutea, verrucis minutissimis albidis conspersa, nigro-limitata; apotheciis confertis, erumpentibus, planis, nigro-pruinosis, intus albidis, margine aterrimo, flexuoso, subintegerrimo.

Hab. On bark; St. Vincent; *Rev. L. Guilding, Hook. herb.*— Thallus 2-3 inches wide, thin as cuticle. Disc of the apothecia pruinose and black, while the lamina, which is white, presents here and there blackish, erect, parallel thecæ.—L. *albi-cærulescens*, Ach. has a whitish and tartareous crust.

10. L. *Mauritiana*, Tayl.; squamis imbricatis atque confluentibus, subrotundis, minutis, margine lobatis crenatisque, flavo-olivaceis, subtus albo-fibrillosis, demum atro-spongiosis; apotheciis interstialibus, quam squamis majoribus, convexis, lutescenti-fuscis, subimmarginatis.

Hab.—On bark; Mauritius; *Hook. herb.* — Patches 1-2 inches wide, yellowish-ash coloured, unaltered by moisture. The nascent scale is at first subrotund, and sends out from beneath on all sides white fibres in a stellate manner; at length the scale becomes crenate, then incised and effigurate at the margin. The patch rests on a thick cushion of dark interlacing fibres. Young apothecia are sometimes seen growing on the discs of the aged ones. Lamina very shallow and transparent; through it is seen the colouring matter of the apothecium, lying beneath in a dense layer, and even extending downwards at the centre, and forming a kind of stipes.

CALICIUM, *Ach.*

1. C. *glabellum*, Tayl.; thallo tenui, leproso, rimoso, albissimo; apotheciis stipitum apicibus immersis, disco pruinoso, stipitibus fasciculatis, subulatis, lævigatis, rigidis, aterrimis, subdecurvis.

HAB.—On rotten wood; Bear Lake, North America; *Richardson, Hook. herb.*—Patches several inches wide, conspicuously white; thallus filmy, closely investing, here and there in flattened elevations. The substellate fasciculi of footstalks usually follow the course of some chink, and are visible to the naked eye; their tops, when closely inspected, contain immersed the minute apothecia. This approaches nearest to C. *proboscidale*, Ach., whose thallus, however, is of an ash colour and more floccose, while the apothecia are turbinate. The *Calicia* probably might be more naturally placed among the *Fungi* than the Lichens.

GRAPHIS, *Ach.*

1. G. *anguillæformis*, Tayl.; thallo tenui, membranaceo, albido, continuo, lævigato, ruguloso, obscure nigro-limitato; apotheciis sparsis elevato-sessilibus, subsimplicibus, elongatis, flexuosis, disco atro, rimæformi, margine thallode albissimo, subinflexo.

HAB. On trees; St. Vincent's; *Hook. herb.*—Thallus somewhat shining. Lirellæ nearly four lines long, rather obtuse at each end, and twisted as eels in motion; they are by no means immersed, according to the generic character of Acharius.

VERRUCARIA, *Ach.*

1. V. *aspera*, Tayl.; thallo illimitato, tartareo, areolato, areolarum marginibus elevatis, nigro-pruinoso, siccitate atro, madore fusco; apotheciis plurimis, immersis, apicibus minutis, glabris, aterrimis, poro inconspicuo.

HAB. On rocks facing the south; Dunkerron, County of Kerry.—Patches often four inches wide, at a distance resembling a coarse black powder. Thallus, by transmitted light in water, appears a greenish-olive membrane covered with coarse black pruina, while the tops of the apothecia become conspicuously black. The black perithecium passes beneath the globose, pale, gelatinous nucleus. In *Verrucaria Maura*, Ach. the thallus is composed beneath of thick, black, tartareous matter; besides the apothecia have their summits larger, flatter, and not contrastedly black in the wet state.

2. V. *imbrida*, Tayl.; thallo illimitato, tenui, tartareo, æquabili, rimoso, fusco-nigricante, madore subolivaceo, sublucido; apotheciis minutis, immersis, poro latiori, marginato, nucleo pallide olivaceo.

HAB. On smooth rocks near the spray of waterfalls; county of Kerry.—Patches seldom two inches wide, thin and lying close to the rock. Thallus smooth, with the lustre of the fracture of charcoal; when wet appearing soft and brownish-olive, when dry of a purplish black. Apothecia not distinct to the naked eye. The thallus bruised in water shews a reddish layer near to the surface. Perithecium pellucid, reddish-brown; there is besides an opaque covering from the thallus.

3. V. *melaspora*, Tayl.; thallo illimitato, verrucis tartareis, minutis confertis atque confluentibus, albidis, planiusculis,

siccitate subrimosis, fuscescentibus; apotheciis plurimis, sparsis, basi subimmersis, atris, submamillatis.

Hab. On wet mural rocks, Carig Mountain; County of Kerry.—Patches six inches wide. Thallus under water very white; under the lens a sordid greenish hue is here and there perceptible. The surface is wrinkled into white flattish confluent ridges. Apothecia various in size, their tops often flattened and irregular, dimpled or globoso-conical. The shell is thick, black, opaque and arched over the nucleus, which is dark from containing numerous ovate, opaque, reticulated, separate or clustered thecæ; besides, the nucleus contains semipellucid subcylindrical bodies, much longer and larger, without any reticulations, but studded with minute pores. Such, perhaps, are the male flowers. This species is allied to V. *gemmifera*, Tayl.: the surface of the thallus, however, is more uneven, there is no limit to the patch; and the apothecia are far larger; while the shell is deficient below the nucleus.

4. V. *rhodosticta*, Tayl.; thallo subtartareo, tenui, verrucoso, verrucis hic illic aggregatis, siccitate purpureo-nigris, madore subgelatinosis, rufescentibus, minute corrugatis; apotheciis sparsis, subglobosis, scabridis, concoloribus.

Hab. On wet rocks, near Sheen Bridge; County of Kerry.—When moistened, the warts appear as rose-brown opaque cells connected by a thin substance of a paler colour, lying on a layer of pale greenish matter. Pores large. The perithecium is homogeneous with the warts; the nucleus very pale reddish-brown, gelatinous and striated. It is allied to our V. *imbrida*.

5. V. *littoralis*, Tayl.; thallo olivaceo-limitato, subtartareo, tenui, lævigato, subcontinuo, rufescenti-atro-purpureo, madore subgelatinoso, pellucido; apotheciis minutissimis, immersis, subconfertis, porosis.

Hab. Very common on the sea-shore, on rocks and stones wetted by the tide; Ireland.—Patches sometimes several yards in extent. Thallus smooth, slippery, very thin. Pores of the apothecia with an elevated border: there is no second perithecium passing beneath the nucleus, which is gelatinous, pale, oblong-spheroid, studded with opaque points among which oblong bodies occur. Probably the minuteness of the apothecia have caused this very common Lichen to remain unrecognised.

ENDOCARPON, *Hedwig*.

1. E. *Wightii*, Tayl.; thallo crustaceo, tenui, contiguo, cinereo-virescenti, margine depresso, albidiori; ostiolis sparsis, depressis, thalli albis, perithecii nigris marginatis, nucleo-hyalino, thecis nigris.

HAB. Madras, *Dr. Wight, Hook. herb.*—Thallus spreading as a continuous, uneven crust, two or three inches in diameter; moistened, the surface presents minute, thickly set, oblong, green granules; when the thallus is broken and beneath the apothecia minute blood-red particles are observable. The nucleus issues as a narrow scariose neck out of the black marginate pore, which again is surrounded by a circular ring of white thallus. This species has some resemblance to V. *epigeia*, Ach., but has neither the subfibrose thallus, or prominent apothecia of the latter.

2. E. *peltatum*, Tayl.; thallo corneo, foliaceo, orbiculari, peltato, flavescenti-cinereo, bibulo, areolato, areolis subrotundis, madore minute rugosis, contiguis, subtus atro-lanuginoso, margine recurvo, integro demum diffracto; apotheciis sparsis, nucleo immerso lamina nigra emergente tecto.

HAB. Near Zwartkop River; Cape of Good Hope; *Zeyher, Hook. herb.*—Thallus in contiguous scales, more than one inch wide, fixed down by the centre, above which it is concave, but with recurved margins; fawn-coloured, unaltered by moisture. The apothecia are few, have no aperture above, but a black, slightly convex layer, covering a roundish transparent nucleus as in the figures in Acharius's *Lich. Univ.* of a *Sagedia.* The colour and areolate thallus keep this species distinct from E. *miniatum*, Ach.

3. E. *speireum*, Tayl.; thallo aggregato, cartilagineo, peltato, rotundato, undulato, sublobato, demum convexo, margine albido, integro, obscure carneo, lævi, subtus concolori, lanuginoso; apotheciis submarginalibus, globosis, atris, basi subimmersis.

Hab. On the ground; Bushman's country, Cape of Good Hope; *Zeyher, Hook. herb.*—Thallus nearly three lines in diameter; when dry concave; tumid and flesh-coloured when moistened. A vertical section shews beneath a pruinose surface a brick-coloured layer, supported on a shallower one of a green parenchymatous substance resting on a white cuticular substratum. The apothecia depart from the generic character of Acharius, by being without pores and scarcely immersed; they consist of a dense blackish perithecium containing a hollow semitransparent, brown nucleus, whose centre is filled with opaque whitish matter. The roots are remarkable, being often four lines long, whitish, the main ones thick and acuminate, densely covered with branched, excessively fine colourless fibrils. It is somewhat allied to the following. It is perhaps *Lichen incarnatus*, Thunberg, which Acharius makes *Psora decipiens*, Hoffm.

4. E. *crenatum*, Tayl.; thallo aggregato, rotundato, cartilagineo, convexiusculo, peltato, rufescenti-carneo, pruinoso, margine albido, crenato, subtus concolori; apotheciis marginalibus, confertis, majoribus, semi-immersis, rufo-carneis.

Hab. On the ground, near the Salt-pan of the Zwartkop River, Uitenhage; *Zeyher, Hook. herb.*—Thallus scarcely two lines wide; the margins raised and free, white beneath; no green parenchymatous matter is observable in the layers. Apothecia flattish, half-immersed, covered with a reddish-brown pruina; the lamina semitransparent, pale brown, resting on a red shallow layer, the entire supported by the cuticular portion. Roots as in the preceding, to which it is allied, and so recedes from the generic character of *Endocarpon*: the colour of the orbicular concave thallus is similar; but the border of the present species is crenate;

and the apothecia are not black, not so spherical, nor so much raised above the thallus.

Trypethelium, *Ach.*

1. T. *luteum*, Tayl.; squamis tumidis, luteis, oblongo-rotundatis, demum confluentibus, convexis; substrato atro, interstiali, elevato, gemmas albidas granulatas ferente; verrucis tenuibus lutescentibus; apotheciis elevatis, solitariis binisve, atris, poro latiori.

Hab. On bark; Madras; *Dr. Wight*, *Hook. herb.*—Patches nearly two inches wide. Scales when dry of a tawney ash colour, when wet deep tawney, rather evenly scattered: in the interstices black tartareous matter rises above the level of the scales. The stroma or covering of the perithecium is thin, tawney, sometimes disappearing by age: the hard black perithecium surrounds the pale gelatinous nucleus. To this species the white granular buds on the interstitial matter seem peculiar.

2. T. *bicolor*, Tayl.; crusta pallide lutescenti, tenui, continua, inæquali; verrucis subprominentibus, angustis, flexuosis, confluentibus, pruinosis, rufescenti-brunneis, albido-limitatis; ostiolis minutis, crebris, subemergentibus, atris.

Hab. On bark; Howison's Poort, near Graham's Town; *Zeyher*, *Hook. herb.*—Patches wide. Crust very thin, with numerous evenly scattered smooth convex elevations, in the hollows of which the warts occur of a purplish-fawn colour. Perithecium black, enclosing the pale gelatinous nucleus: this exhibits under a lens aggregate filiform vessels, among which are some much wider, containing numerous colourless, contiguous, spherical sporules. By the depressed warts it is allied to T. *porosum*, Ach.; but the colour of the crust, different from that of the verrucæ, and these last, more elongated and flexuose, easily distinguish our species.

Variolaria, *Ach.*

1. V. *carnea*, Tayl.; crusta tenui, cinereo-alba, nigro-limi-

tata, minutissime granulata, granulis convexiusculis, rugosis, demum erumpentibus; apotheciis convexis, immarginatis, pruina alba crassa tectis, disco carneo.

Hab. On bark; Brazil; *Hook. herb.*—Thallus about two inches wide, whitish ash-coloured, not altered by moisture; but the discs of the apothecia when wetted assume a deeper colour. The surface of the thallus is minutely wrinkled or covered with contiguous flattish granules, which sometimes bursting at their tops, emit buds in the form of a whitish powder. Apothecia of the size of poppy seeds, at first covered with a coarse white powder.

URCEOLARIA, *Ach.*

1. U. *citrina*, Tayl.; hypothallo atro; thallo citrino, squamis subrotundis, compressis, sublobatis, minutis; apotheciis immersis, punctiformibus, angulatis, pallidioribus, immarginatis, subconfluentibus.

Hab. On rocks, Swan River; *Mr. James Drummond.*—Patches of crowded scales several inches wide: the black tartareous substratum rising up in the interstices of the scales. In most respects allied to U. *Acharii*, Ach.; but the colour is that of *Lecanora citrina*, Ach. Apothecia, solitary or two together, contorted, occur on each fertile scale.

2. U. *tessellata*, Tayl.; hypothallo atro, sparso, crusta rimoso-areolata, subverrucosa, rubella, areolis planis, lævibus, intus flavescentibus; apotheciis minutis, lamina proligera demum exserta, convexiuscula, pallide citrina, margine subintegerrimo.

Hab. On quartz rock; Swan River; *Mr. James Drummond.*—Patches wide, closely investing. The areolæ may be considered crowded flattish warts; whose margins when moistened appear subcrenate; the colour is deep brick-red. The thallodal coloured part of the apothecium does not pass beneath the lamina. Differs from U. *diamorta*, Ach., by the more orange colour of the thallus and the discs of the apothecia being pale yellow, not black.

Lecanora, *Ach.*

1. L. *vigilans*, Tayl.; crusta tartarea, tenui, rugulosa, alba, nigro-limitata; gemmis minutissime granulatis; apotheciis sparsis, majoribus, convexis, disco rufescenti, pruinoso, intus fusco-albidis, margine incrassato integerrimo, subundulato, rufo-cinereo.

Hab. On bark, Mauritius. Casapí, Peru; *Mathews, Hook. herb.*—Patches 1-2 inches wide; thallus thin, assuming the irregular surface of the bark on which it grows. The buds are minute granules, sometimes tipped with brown. Apothecia a little larger than turnep-seed. A vertical section shews a thin dark layer interposed between the lamina and white thallodal matter. The black limit to the crust, the entire border of the apothecia, and the minute granular buds distinguish this species from L. *subfusca*, Ach.

2. L. *millegrana*, Tayl.; thalli tartarei granulis confertis, planiusculis, subconfluentibus, albido-olivaceis, madore virescentibus, minutissimis, inæqualibus; apotheciis minutis, convexis, aggregatis, disco rufescenti, pruinoso, intus albidis, margine pallide fusco, integerrimo.

Hab. No. 589. On trees; Buenos Ayres; *Tweedie, Hook. herb.* — Patch 1-2 inches wide, without any distinct border, obscurely pale olive-green, very rough; granules scarcely lobate. Apothecia when moistened dark brownish-red, interiorly very pale brown. This differs from a mountain variety of L. *subfusca*, Ach. common in Ireland, by the entire border of the apothecia and the crowded tumid granules of the thallus. It, perhaps, may be considered a *Biatora* of Acharius.

3. L. *epiphora*, Tayl.; thallo cartilagineo, areolato-rimoso, rugoso, albido-cinereo, nigro-limitato; gemmis minutis, granulatis, demum pulverem flavicantem emittentibus; apotheciis prolifero-conglomeratis, disco plano, scabro, aurantiaco, margine thallode demum crenulato, gemmifero.

Hab. On bark; St. Vincent's; *Rev. L. Guilding, Hook. herb.* —Thallus 2 or 3 inches wide, very thin, whitish but with a yellow hue from the powder of the buds. Aged apothecia frequently proliferous. Beneath a disk of dusky orange pruina is a transparent and colourless lamina, resting on whitish cortical matter. This may be known from *Lecidea aurantiaca*, Ach., by the thallodal border of the apothecia, and by the yellow buds on the surface of the thallus, and on the margins of the apothecia.

4. L. *bibula*, Tayl.; hypothallo albo, filamentoso, implexo; thalli granulis subvillosis, subrotundis, planiusculis, confertis, pallidissime virentibus; apotheciis sparsis, fusco-rufis, demum convexis, margine thallode tenuissimo, evanescente.

Hab. 1648. On bark; Juan Fernandez; *Hook. herb.*— Patches 2 or 3 inches wide; readily imbibing water; when the thallus swells, the granules have very minute lobes. The lamina is very shallow and transparent, resting upon much brownish-red matter which gives the colour to the apothecia.

5. L. *comminuta*, Tayl.; thallo disperso, squamis minutissimis, rotundatis, confertis, convexis, subintegerrimis, pallide sulphureis; hypothallo tenui, atro; apotheciis quam thalli squamis majoribus, disco convexiusculo, nigro-pruinoso, margine subundulato, integerrimo.

Hab. On rocks; Dunkerron, county of Kerry.—Patches two inches wide, to the naked eye appearing as the fine powder of sulphur scattered on a blackish ground: the colour is not altered by moisture: under a lens the round scales are distinct. It may be known from L. *intricata*, Ach., by its more dispersed substratum, by the far minuter scales, by the convex disk of the apothecia; and principally by the diameter far exceeding that of the thallodal scales. This is the variety β. *comminuta* of L. *intricata* in *Flora Hibernica*.

6. L. *Drummondii*, Tayl.; thallo granulato-lobato, citrino, pruinoso, lobis brevissimis, concretis, subradiantibus,

tumidis, margine decurvis; hypothallo nigricante; gemmis minutissimis, granulatis, concoloribus; apotheciis interstilialibus, majoribus, olivaceo-carneis, planiusculis, flexuosis, margine demum crenulato, albido.

HAB. On rocks; Swan River; *Mr. J. Drummond.*—Scales aggregate, as in L. *fulgens*, Ach. The old thallus becomes pulverulent, and whitish. Disks of the apothecia, when moistened, greenish. From L. *fulgens*, Ach., ours differ by the minuter thallus, the black substratum and the apothecia occurring in the interstices of the scales, being too of a greater size and more olive colour.

7. L. *erythrosticta*, Tayl.; thallo illimitato, leproso, albido, demum nigricante; apotheciis confertis, convexiusculis, demum immarginatis, saturate aurantiacis; gemmis pulveraceo-granulatis, concoloribus.

HAB. On bark; Swan River; *Mr. James Drummond.*—Patches 5—6 inches wide; thallus very thin. Buds and disks of the apothecia reddish-orange; the latter interiorly pale greenish-yellow. More red than any variety of L. *citrina*, Ach.: the scales, too, are more distinctly lobed, and turn green when moistened.

PARMELIA, *Ach.*

1. P. *albo-plumbea*, Tayl.; thallo rotundato albido plumbeoque, lobis linearibus, dilatatis, crenatis, subtus albido-fibrilloso atque nigro-tomentoso; gemmis subrotundis, demum confluentibus, pulverem album crassum effundentibus.

HAB. Swan River; *Mr. James Drummond.* — Thallus 1-2 inches wide: central lobes elongate, convex; the marginal ones rather concave, but their border deflexed. Allied to P. *pulverulenta*, Ach.: the surface, however, is more irregular, and the buds more prominent. When moistened the colour is unaltered.

2. P. *imitatrix*, Tayl.; thallo orbiculari, olivaceo-fusco, subtus nigro-fibrilloso; lobis linearibus, sinuato-radiantibus,

crenatis, lævigatis, rugosis; gemmis subrotundis; apotheciis planiusculis, disco concolori, margine subintegerrimo, dorso corrugato.

Hab. Swan River; *Mr. James Drummond.*—It requires attentive examination to separate the present species from P. *olivacea,* Ach. The lobes of the thallus are more elongated, their surface smooth, never rough with rigid points: the margins of the apothecia are quite entire; and their under surface is much wrinkled. When moistened the surface of the thallus assumes a yellowish hue.

3. P. *incisa,* Tayl.; thallo suborbiculari, lævigato, inæquabili, pallidissime sulphureo, subtus nigricante, lobis incisis, sinuatis, margine inæquali adscendente; gemmis marginalibus, granulatis, planiusculis; apotheciis sessilibus, margine incurvo, tumido, subdiviso, lævi, disco concavo, fusco.

Hab. Swan River; *Mr. James Drummond.*—Thallus nearly eight inches wide: margins of the lobes usually blackish: laciniæ imbricated, attached beneath by very short blackish processes. P. *liliacea,* Ach., it has the lobes more deeply divided; while the pruina on the surface of that species as well as the black fibrils beneath are entirely wanting.

4. P. *scabrosa,* Tayl.; thallo suborbiculari, inciso, pallidissime sulphureo, subtus nudo, nigricante, lobis elongatis, convexis, breviter laciniatis; gemmis angulato-granulatis, demum in pulverem album erumpentibus; apotheciis subsessilibus, concavis, margine incurvo, crenulato, disco fuscescente.

Hab. Swan River; *Mr. James Drummond.*—Thallus 1—2 inches wide, pale, wrinkled, naked beneath. Buds central. It resembles P. *saxatilis,* Ach.; but the surface is destitute of reticulating ridges, and there are no elongated fibrils beneath the thallus.

5. P. *atrocapilla,* Tayl.; thallo minuto, conferto, albissimo, lineari, angulato, minute sinuato, lobis brevibus, rotundatis, sinubus oblongis, subtus nigro-fibrillosis, tricis

confertis, atris; gemmis marginalibus, minutis, albido-pulverulentis, demum explanatis.

Hab. Nepal; *Wallich.*—Patches very white, several inches wide, but consisting of crowded, minute thalli, scarcely exceeding one quarter of an inch in length: the younger thalli are simple roundish disks. The grains of the buds separate and at length expand into new thalli. No apothecia observed.

6. P. *Caraccensis,* Tayl.; thallo laxe cæspitoso, albido-virenti, lævigato, anguste lineari, dichotomo, supra canaliculato, subtus margineque densissime atro-villoso.

Hab. Caraccas; *J. Linden,* 576. *Hook. herb.* Near Quito; *Professor William Jameson,* 1845. — Thallus 5-6 inches long: laciniæ elongated, channelled, narrow, and thus distinguished from P. *sinuosa,* Ach.; besides it is not sinuato-pinnatifid, nor are the sinuses circular.

7. P. *carporrhizans,* Tayl.; thallo stellato, nudo, fusco-cinerascenti, minutissime albido-reticulato, subtus atro-fibrilloso, laciniis contiguis, subpinnatis, sinuato-lobatis, atro-marginatis, lobulis planis, sinubus ovalibus; gemmis granulatis; apotheciis initio sessilibus subglobosis, demum planis, disco rufo, margine tenui, crenulato, extus fibrillis atris radicantibus.

Hab. On bark; Canaries; *Dr. Lemann, Hook. herb.*—Thallus 5 inches in diameter, pale brownish ash-coloured, devoid of lustre, lobed like some varieties of P. *lævigata,* Ach., uneven, the more aged parts with transverse splits; attached to bark by short dense black fibrils: these at length, again appear on the backs of the apothecia and fixing them down to the thallus cause them to be quite flat. On the edges of the laciniæ a few white granules may, sometimes, be observed, which, elongating and flattening, are converted into thalli. The radicating apothecia show an affinity with P. *ulothrix,* Ach., from which the size, colour and lobes of the thallus, and the black fibrils of the under surface are sufficiently distinctive.

8. P. *conferta*, Tayl.; thallo aggregato, albido, inciso-lobato, laciniis linearibus, subimbricatis, glabris, centralibus convexis, subtus margine concolori, medio nigrescente atque fixuris brevibus scabro; gemmis granulatis, compressis; apotheciis tubuloso-stipitatis, concavissimis, margine crenulato, demum gemmifero.

HAB. Van Diemen's Land; *Mr. Borrer's herbarium.*—Thallus scarcely an inch wide; several such, however, are clustered on bark and form wide patches; the laciniæ, especially towards the centre of a patch, tumid but not hollow. The buds are frequently marginal; they soon assume the flattened form, and expand into new thalli. Apothecia rise on considerable, hollow and wrinkled stalks; the disk is very concave and of a light chesnut colour. The want of inflated lobes readily distinguishes this from P. *phylodes*, Ach.

9. P. *coralliphora*, Tayl.; thallo stellato, albido-cinereo, multifido, laciniis approximatis, linearibus, convexiusculis, nigro-ciliatis, subtus margine albis, centro fixuris atris devincto; gemmis sparsis, concoloribus, confertis, initio granulatis, statim cylindricis; apotheciis submarginalibus, concavis, disco fusco-rufescenti, margine crasso, elevato, gemmis cylindricis densissimis coronato.

HAB. Casapí; Peru; *Mathews, Hook. herb.*—Patch several inches wide, with the habit of P. *speciosa*, Ach.: the laciniæ, however, are convex; and the crowded cylindrical buds on the apothecia are very distinctive.

10. P. *cribellata*, Tayl.; thallo orbiculari, cinereo-glauco, rugoso, inciso-lobato, lobulis cristato-multifidis, crenatis, concaviusculis, subtus nigricantibus, inflatis, foraminulosis, rugosis; apotheciis centralibus, majoribus, demum planiusculis, disco rufescenti, margine tenui demum crenulato, extus rugosis.

HAB. West coast of North America; *Menzies.*—Patch 2 inches wide, very uneven. Lobes of the thallus varying in breadth, sometimes linear, sometimes rotundate in the

centre, with short linear terminal laciniæ. Inferior surface smooth, inflated and pierced with minute holes, which distinguish it from its congeners.

11. P. *cristifera*, Tayl.; thallo orbiculari, albido, elevato-rugoso, glabro, lobis rotundatis, depressis, integerrimis, subtus margine nudo, glabro, castaneo, medio nigro-punctato atque fixuris atris devincto; gemmis marginalibus, confertis, pulveraceis, concoloribus; apotheciis sparsis, concavis, disco pallide castaneo, margine incurvo, demum pulverulento.

Hab. Calcutta; *Wallich.* Mauritius; *Dr. Wright.* Brazil; *Gardner.* Demerara; *Mr. Parker, Hook. herb.*—Thallus 6-8 inches wide, cream-coloured, unaltered by moisture; the margins of the lobes at the central parts with conspicuous elevated crests of powdery buds. It is allied to P. *perlata*, Ach.; but the clusters of buds are more minute; and the inferior surface is destitute of black tricæ.

12. P. *cylindophora*, Tayl.; thallo orbiculari, fusco-castaneo, stellato, rugoso, lobis sinuato-pinnatifidis, subimbricatis, laciniis convexis, crenatis, margine subtus pallentibus, tenuissime villosis; gemmis concoloribus, cylindricis, apice albidis.

Hab. Madras; *Dr. Wight, Hook. herb.*—Nearly four inches in diameter; dusky brownish-olive, somewhat greener, when moistened; central lobes wrinkled, convex, deflexed, the marginal rather concave. Buds often three or more clustered together; the margins of the laciniæ and tops of the buds whitish. The cylindrical buds readily distinguish this species from P. *Aquila*, Ach., which it resembles in colour.

13. P. *diademata*, Tayl.; thallo stellato, glabro, undulato, cinerascente, subtus nigro, ramoso-fibrilloso, laciniis planis, linearibus, lobatis, crenatis; gemmis marginalibus, demum explanatis; apotheciis substipitatis, concavis, margine gemmis coronato, disco fusco.

Hab. Nepal; *Wallich.*—Thallus five inches wide, cartilagineo-membranaceous, the laciniæ flexuose, imbricated, the margins crenate with flat roundish buds, which at first appear as specks of whitish powder; beneath are branched black tricæ. Upper surface brownish-grey. Disc of the apothecia dark reddish-brown. Strongly allied to P. *speciosa*, Ach., differing by the darker colour, the more uneven edges of the laciniæ of the thallus, and by the flattish buds which reappear on the margins of the apothecia, giving them a crowned appearance.

14. P. *divaricata*, Tayl.; thallo laxe implexo, dichotomo, lineari-laciniato, suberecto, laciniis divaricatis, convexis, albescentibus, subtus canaliculatis, nigris, tricis atris, subsimplicibus, rigidis, gemmis subnullis; apotheciis subpedicellatis, subterminalibus, disco concavo, margine, subintegro.

Hab. Nepal; *Wallich.*—About two inches long; the more aged parts of the thallus of a tawney hue. Apothecia in all stages very concave, sessile on corrugated pedicels; their disc chestnut-coloured, their margins at length ruptured. From *Borrera leucomela*, Ach., the present differs by the fewer and more simple tricæ; by the more convex laciniæ, whose margins, as well as those of the apothecia, are entire.

14. P. *echinata*, Tayl.; thallo aggregato, ramoso, adscendente, tenui, oblongo, concavo, albissime pruinoso, subinciso, subtus virescenti, tricis albidis echinato; gemmis planis, oblongis; apotheciis stipitatis, concavissimis, demum explanatis, atro-purpureis, margine gemmifero.

Hab. Brazil; *Mr. K. Leyland's herb.* Pennsylvania; *T. Drummond.*—Thallus minute, covered with a snow-white pruina, through which the pale pea-green colour of the rest of the thallus is observable, especially when moistened. The buds on the margins of the apothecia are minute radiating thalli, echinated beneath. The green colour of the inferior surface is singular.

15. P. *exsecta*, Tayl.; thallo suborbiculari, subpinnatifido, inciso-lobato, albido, lobis brevibus, linearibus, truncatis,

sinubus circularibus; gemmis terminalibus, minutis, rotundis, albidis, medio nigris; apotheciis concavis, rufo-castaneis, margine demum disrupto, incurvo.

HAB. Nepal; *Wallich.*—Thallus scarcely exceeding one inch; several, however, are crowded and imbricated, forming a considerable patch: the colour becomes slightly brown by age. The buds are circular openings at the extremities of the ultimate lobes, yielding a white powder at the rim, but black in the centre. The thallus is more deeply divided than in P. *lævigata*, Ach.; the buds are more minute, and do not yield a brown powder; and the apothecia in their most advanced stages have no powder on their margins.

16. P. *endoleuca*, Tayl.; thallo albido, tenuissimo, adnato, subtus nigro-fibrilloso, lobis multifidis, confertis, centralibus rugosis, marginalibus sinuato-laciniatis, laciniis lacero-truncatis; gemmis minutissime granulatis; apotheciis confertis, majoribus tenuioribus, planis, subflexuosis, intus albidis, subtus nigricantibus, disco subfusco, margine subintegerrimo.

HAB. n. 75. On bark; Swan River; *Mr. James Drummond.* —Patches 3-4 inches long. Thallus closely investing: apothecia prominent and very numerous; on their margins a few white granular buds may be observed. From ours, P. *ulothrix*, Ach. differs by its stellate thallus, its longer laciniæ: the apothecia, besides, are more concave and radicate exteriorly.

17. P. *Frankliniana*, Tayl.; thallo suborbiculari, inciso-lobato, flavo, nudo, subrugoso, subtus venoso, nudiusculo, lobis rotundatis, incisis, crenatis, planis, margine subplicatis; gemmis terminalibus, cristantibus, flavis, pulveraceis.

HAB.—Arctic regions; Franklin's first voyage; *Hook. herb.* —Patches scarcely two inches wide, usually much less, of a brilliant yellow, unaltered by moisture. Under the central parts of the thallus are a few whitish rootlets, but which at length turn black. The sinus between the lobes are nearly round. This can scarcely be confounded with

P. *caperata*, Ach., its thallus is far smaller, and its buds in powdery terminal crests of a bright gamboge yellow.

18. P. *fulvella*, Tayl.; thallo orbiculari, albido-fulvo, minutissime albo-punctato, glabro, lobis rotundatis, subrugosis, repando crenatis, subtus lanugine pruinata concolori devinctis; gemmis marginalibus, statim lamelliformibus; apotheciis tubuloso-pedicellatis, concavis, disco rufescenti, margine tenui, inciso-crenato, extus villosis.

Hab. Casapí; Peru; *Mathews*, *Hook. herb.*—Thallus 1-2 inches wide, pale tawney ash-coloured, the surface somewhat reticulated with minute white dots; the colour is unaltered by moisture. The buds of the apothecia are villose, like the inferior surface of the thallus. By the tubular podetia of the apothecia it is allied to P. *perforata*, Ach.; differing essentially from that species by its conspicuous buds.

19. P. *fistulata*, Tayl.; thallo cæspitoso, procumbente, dichotomo, multifido, lævigato, albido, laciniis linearibus, convexis, margine recurvis, subtus atro-fibrillosis; gemmis albis minutissimis, confertis, subconfluentibus; apotheciis sessilibus, concavis, disco castaneo, margine incurvo, subintegerrimo.

Hab. Tondil; Argentine Republic; *Tweedie*, *Hook. herb.* Monte Video; *Darwin.*—Tufts several inches wide; lacinia almost cylindrical. The buds germinate principally at the tops of the lobes and expand into minute thalli.

20. P. *filamentosa*, Tayl.; thallo subcæspitoso, filamentoso, compressiusculo, laciniis dichotomis, divaricatis, intricatis, capillaceo-attenuatis, flavis; apotheciis sparsis, disco planiusculo, fulvo, margine tenui, albido, integerrimo.

Hab. On *Hepaticæ*; Ohio.—The only specimen seen was minute, but perfect. Tuft scarcely one inch wide: the older parts of the thallus whitish, with a faint tinge of yellow, the younger more deeply coloured, ultimate setaceous laciniæ often fascicled. Buds scattered, most minute, flattened granules of the colour of yolk of eggs. Apothecia scarcely visible to the naked eye. The colour of *Borrera exilis*, Ach., is white, and it is a more erect species.

21. P. *Hookeri*, Tayl.; thallo aggregato, albo, lineari, sinuato-inciso, lobulis pinnatifidis, sinubus subcircularibus, subtus atro, pannoso; gemmis minutis, cinerascentibus, granulatis, statim cylindricis, demum in thallum expandentibus; apotheciis marginalibus, planis, disco rufescenti, margine tenui, incurvo, demum gemmifero.

Hab. On bark; St. Vincent's; *Rev. L. Guilding, Hook. herb.*—The compound patch of thalli is rounded. Lobes incised as in P. *sinuosa*, Ach.; yet, not only is the colour of the thallus different, but the granulate and cylindrical buds are essentially distinctive.

22. P. *inæqualis*, Tayl.; thallo aggregato, pallide sulphureo, inciso-lobato, laciniis linearibus, flexuosis, ramosis, obtuse rugosis, planiusculis, subtus nigrescenti, margine tumenti; gemmis granulatis, confertis, confluentibus; apotheciis substipitatis, concavis, extus rugosis, margine demum gemmifero.

Hab. Van Diemen's Land; *Mr. Borrer's herb.*—Several thalli, each about one inch wide, occur, forming a large patch on the bark of trees, of a pale yellow colour; laciniæ imbricated, often dichotomous. Buds usually central. Disks of the apothecia dark brown, their margin incurved and crenulate. However tumid the terminations of the laciniæ of the lobes, they are never hollow as in P. *physodes*, Ach.; the ramification and figure of the lobes is more like that of P. *incurva*, Ach.

23. P. *lamelligera*, Tayl.; thallo cæspitoso, compresso, glabro, albido-cinereo, subpinnatim dichotomo, laciniis convexiusculis, ultimis brevissimis, obtusis, nigro-ciliatis, subtus margine albis, centro fixuris nigris devincto; gemmis marginalibus, statim lamelliformibus.

Hab. On Casapí; Peru; *Mathews, Hook. herb.*—Patch several inches wide, consisting of numerous substellate or cuneate thalli, frequently with palmate lobes, yet, sometimes, dichotomous and even subpinnate. The aged parts of the thallus are of a smoke grey, the younger paler, and snow-white beneath the edges. The segments are not so dilated as in P. *tenella*, Ach., and there are no *soredia* present.

24. P. *leiocarpa*, Tayl.; thallo orbiculari, cinereo-virescenti, rugoso, sublacunoso, lobis periphericis tenuibus, rotundatis, crenulatis, subtus albido-cinereis; gemmis granulatis demum cylindricis; apotheciis concavis, nudis, disco pallide castaneo, margine incurvo demum crenulato.

HAB. United States; *Greene, Hook. herb.*—Thallus 3-4 inches wide, coarsely wrinkled, the intervals again minutely wrinkled, whitish-ash coloured when dry, greenish when wetted: the inferior surface is whitish brown. Differs from both P. *saxatilis*, Ach., and P. *aleurites*, Ach., by the absence of the dense black tricæ beneath, and remarkably by the naked apothecia, on the margins and backs of which the buds do not appear.

25. P. *limæformis*, Tayl.; thallo sordide cinereo, cæspitoso, adscendente, lineari, dichotomo, apicibus acuminatis, subtus canaliculato, atro, gemmis granulatis confertis tecto atque scaberrimo.

HAB. Chiloe; *Cuming, Hook. herb.* — Thalli 2-3 inches long. The buds at first appear as black points, but soon become whitish elevated granules: short black tricæ occur very sparingly on the inferior surface.

26. P. *leucothrix*, Tayl.; thallo orbiculari, albido, depresso, lineari, multifido-laciniato, laciniis minutis, approximatis, crenulatis, breviter albo-ciliatis, subtus albis, gemmis concoloribus, granulatis; apotheciis marginalibus, planiusculis, disco rufescenti, margine demum crenulato, extus fibrillos albidos demittentibus.

HAB. On bark; St. Vincent's; *Rev. L. Guilding, Hook. herb.* —Patches 2-3 inches in diameter, exteriorly linear and radiating; at the centre the lobes are shorter: buds in very white, round grains. Apothecia sending down white rootlets from their backs, which fix themselves to the thallus as in P. *ulothrix*, Ach.; but this species has the surface more brown, the laciniæ of the thallus wider, and the margins of the apothecia entire.

27. P. *livida*, Tayl.; thallo substellato, adnato, cinereo, nudo, rugoso, laciniis angustis, difformibus, periphericis sinuato-incisis, dichotomis atque retusis, subtus atro-fibrillosis; gemmis concoloribus granulatis, demum explanatis; apotheciis sparsis, majoribus, demum planis, margine, gemmis compresso-granulatis, crenulato, disco livide purpurascenti.

Hab. On bark; New Orleans; *Hook. herb.*—Thallus resembling some states of P. *stellaris*, Ach., however, it is flatter and neither so stellate or so white. The apothecia are exteriorly smooth and are sessile, their margins thin, expanding and breaking up, the disk of a pale leaden-purplish colour.

28. P. *mamillata*, Tayl.; thallo cæspitoso, adscendente, substellato, pubescenti, albido-cinereo, laciniis linearibus, pinnatifidis, ciliatis, subtus canaliculatis, albidioribus, lævibus, venoso-lacunosis; gemmis granulatis, tumidis; apotheciis podicellatis, demum planis, disco fusco, margine subintegerrimo, extus pubescentibus.

Hab. From *Dr. Fischer; Hook. herb.:* also Canaries; *Dr. Lemann.*—Patch 3-4 inches wide, brownish ash-coloured, covered with a short concolorous pubescence, which, however, is wanting beneath. Ultimate branches often pedate; lobes very short, their terminations not attenuated as in P. *villosa*, Ach., nor terete as in P. *ephebea*, Ach., whilst the colour of the thallus is very different from that of P. *Atlantica*, Ach. Besides, on none of these three do mamillate granules occur. The apothecia are described from Dr. Fischer's specimens.

29. P. *mutabilis*, Tayl.; thallo suborbiculato, lævigato, cinereo, lobis difformibus, periphericis sinuato-laciniatis, convexis, subtus fuscescentibus, nigro-villosis; gemmis marginalibus, granulatis; apotheciis concavis, disco rufescenti, margine tenui incurvo, demum gemmis crenulato.

HAB.—No. 5. Uitenhage; *Zeyher*, *Hook. herb.*—Thallus sometimes two inches wide, variously lobed, sometimes linear, sometimes rotundate, but at the periphery usually inciso-sinuate, resembling in its mode of branching P. *conspersa*, Ach., but in colour and general habit approaching P. *herbacea*, Ach. The inferior surface is nearly black, and polished beneath the margins of the lobes.

30. P. *Nepalensis*, Tayl.; thallo cæspitoso, adscendente, lineari, dichotomo, lævigato, laciniis elongatis, convexiusculis, acutis, lutescenti-albidis, subtus nigris, rugosis, canaliculatis; gemmis minutis, subrotundis, apice nigropunctatis; apotheciis sparsis, substipitatis, disco concavissimo, castaneo, margine crenulato, inflexo.

HAB. Nepal; *Wallich.*—Tufts four inches high. Thallus increasing in breadth just before branching; ultimate branches lanceolate, beneath furnished with a few scattered, short, black, scabrous tricæ. This species is allied to P. *furfuracea*, Ach.; in which, however, the thallus is more flat, and the buds occur in crowded short cylinders, which are absent from our plant.

31. P. *ophioglossa*, Tayl.; thallo cæspitoso, adscendente, rufo, basi flavicante, subdichotomo, laciniis elongato-ellipticis, subacutis, margine recurvis, ciliatis, subtus canaliculatis, pulvere conspersis; gemmis submarginalibus statim in tricas apice nigras abeuntibus.

HAB. Monterey; California; *Capt. Beechey*, *Hook. herb.*—Thallus nearly two inches long, segments divaricating; above they are broader, flatter, and red, below nearly cylindrical and pale greenish-yellow: the powder in the channel beneath the lobes is reddish under the red parts, but snow-white under the yellowish parts. This has some resemblance to *Cetraria Islandica*, Ach.; but the analogy of the inferior surface is far greater with the *Borreræ* of Acharius.

32. P. *patinifera*, Tayl.; thallo subradiato, lobis lineari-oblongis, rotundatis, lobato-crenatis, albidis, madore

virescentibus, lævigato, inæquabili, subtus corrugato, margine albido, cœterum scabroso-fuscescenti; gemmis marginalibus, subrotundis, planis; apotheciis sessilibus, planis, castaneis, margine radiato-gemmiferis.

Hab. Organ Mountains; Brasil; *Gardner, G. J. Lyon, Esq.*—Thallus five inches in diameter, deeply and irregularly divided into broad linear lobes. The upper surface has shallow unequal and irregular pits. Apothecia of a conspicuous size. Lobes of the thallus imbricated, but by no means sinuate.

33. P. *polycarpa*, Tayl.; thallo orbiculari, membranaceo, rugoso, albido-cinereo, virescenti, subtus centrum versus nigrescenti, exterius fixuris nigris devincto, sub ipso margine nudo, rugoso; gemmis marginalibus, granulatis, albidis; apotheciis demum concavissimis, extus rugosis, disco castaneo, margine tenui crenato-rupto, incurvo.

Hab.—On bark; Swan River; *Mr. James Drummond.*—Differs from P. *Borreri*, Ach., by the want of cup-shaped receptacles of the buds, and from P. *corrugata*, Ach., by the paler colour of the thallus, and less red disks of the apothecia, besides the lobes of the thallus are less rotundate.

34. P. *plumosa*, Tayl.; thallo stellato, cinerascenti, subtus subconcolori, fixuris nigrescentibus devincto, lobis plumoso-rugosis; gemmis subglobosis, pulveraceis, albidis; apotheciis minutis, concavis, disco nigro-pruinoso, margine crasso, incurvo, crenulato.

Hab.—On bark; Low Island; *Capt. Beechey, Hook. herb.*—Thallus 3-4 inches wide, lying closely adnate to the bark; lobes radiating, wrinkled. Beneath a black pruinose disk is a colourless lamina with a few erect blackish thecæ, resting on a layer of black matter as in *Lecanora Ceratoniæ*, Ach.; by which mark this species is certainly distinguished from P. *pulverulenta*, Ach., and from P. *stellaris*, Ach., as well as by the subglobose whitish soredia.

35. P. *palpebrata*, Tayl.; thallo substellato, cinereo, subru-

goso, laciniis vage ramosis, linearibus, convexis, cinereo-ciliatis, gemmis granulatis; scabro, subtus albo stuppeo; apotheciis podicellatis, concavis, disco nigrescenti, margine incurvo, subintegerrimo, ciliato, extus albido-pulveraceis.

Hab. No. 1467. Peru; *Cuming*. Jamaica; *Dr. Wright, Hook. herb.*—Thallus 3-4 inches wide. The ciliæ of the apothecia are short and in a young state lie across the disks. The *lamina proligera* is pale and pellucid, thickly set with dark thecæ and emerging above the disk of the apothecia.

36. P. *saccatiloba*, Tayl.; thallo orbiculari, albido-cinereo, gemmis minutis granulatis creberrimis scabriusculo, lobis obtuse complicatis, rotundatis, subintegris, margine recurvis, subtus fusco-nigro glabro, elevato-punctato; apotheciis sparsis, concavis, disco castaneo, margine crenulato, extus gemmifero.

Hab.—Pitcairn's Island; *Beechey*. Mauritius; *Dr. Wight*. Brazil, *Hook. herb.*—Thallus several inches wide, pale ash-coloured, unaltered when wetted. Buds tipped with a dark brown spot, lobes uneven with large convolutions, flaccid, somewhat saccate in appearance. Apothecia sessile, the border incurved, exteriorly very rough with buds. In characters it approaches P. *scortea*, Ach.; but the inferior surface is smooth, while the upper is far more convolute and uneven.

37. P. *subflava*, Tayl.; thallo substellato, albido-flavescente, rugoso, sublacunoso, subtus concolori, fusco-fibrilloso; laciniis sinuato-lobatis; gemmis marginalibus, confertis, elongato-granulatis; apotheciis sessilibus, concavis, demum explanatis atque margine gemmiferis.

Hab. Van Diemen's Land; *Mr. Borrer's herb.*—Thallus about half an inch in diameter; lobes imbricated and aggregated of adjoining individuals forming a wide patch on the bark of trees, dark cream-coloured, somewhat pitted and wrinkled; the tops of the laciniæ rounded.

Buds crowded, sometimes slightly branched. This is a minuter species than P. *saxatilis*, Ach., nor has it the reticulated surface or retuse lobes of this species.

38. P. *stuppea*, Tayl.; thallo coriaceo, suborbiculari, fusco-rufescenti, rugoso, lobis repando-crenatis, intus rufescenti, stuppeo, subtus atro, lævigato, ruguloso; gemmis marginalibus, pulveraceis, demum olivaceis; apotheciis marginalibus, demum planis, disco atro, lævigato, margine tenui, undulato, incurvo, demum gemmifero, extus villosis.

Hab. Monterey, California; *Beechey, Hook. herb.*—Thallus 2-3 inches wide, very uneven, the central parts minutely wrinkled. Under the shining black cuticle of the inferior surface a red membrane occurs; between which and the upper surface of the thallus there is a pale brown, cottony substance, which is much compacted. Black tricæ may be observed beneath.

39. P. *sparsa*, Tayl.; thallo in maculam aggregato, albo, minutissimo, lineari, angulato, varie lacinulato, laciniis subconvexis extus latioribus, subtus atro-fibrillosis; gemmis granulatis, statim planiusculis; apotheciis sparsis, minutissimis, disco subfusco, marginem album integerrimum demum æquante.

Hab. On bark; St. Vincent's; *Rev. L. Guilding, Hook. herb.*—Thallus appears as a brown spot, on which the minutest white shreds or laciniæ are scattered: the margins of these resemble a succession of white dots which are often confluent. Apothecia not visible to the naked eye. Allied to P. *elæina*, Ach.; but the thallus is far more minute and more scattered.

40. P. *tenuiscypha*, Tayl.; thallo suborbiculari, inciso-lobato, pallide castaneo, lobis margine undulatis, crenatis, subelevatis, vetustis rugosis, junioribus inæqualibus; gemmis albidis, pulverulentis sulcos brevissimos subsimplices complentibus; apotheciis majoribus, concavissimis, margine tenui, demum disrupto, disco pallide castaneo.

Hab. Macquarry River; *Mr. Robert Ball's herb.*—Thallus

3-4 inches wide, rugged, irregularly channelled, the edges waved and raised; the lobes subimbricated. From the European P. *sulcata*, Tayl., the present may be known by its browner colour, more channelled lobes, by the furrows in which the buds appear being more slender and more simple, whilst the buds themselves are white.

41. P. *Wallichiana*, Tayl.; thallo orbiculari, albo, glabro, subtus atro, hispido, lobis rotundato-sinuatis, crenatis; gemmis concoloribus, minutissime granulatis, demum elongatis; apotheciis sessilibus, fusco-castaneis, margine rupto, incurvo, gemmifero.

HAB. Nepal; *Wallich.*—Thallus 8-10 inches wide, coarsely wrinkled, smooth, decurved at the margins, whose terminations are brown and shining, cream-coloured, beneath blackish with very short hispid tricæ. Lobes cuneate. Apothecia central, crowded, very concave, the disk reddish-brown. Ours differs from P. *scortea*, Ach., by the flatter thallus, whose lobes are less deeply divided, and more regularly crenate, by the short tricæ of the inferior surface, and by the pale granulate buds which reappear on the margins of the apothecia.

CETRARIA, *Ach.*

1. C. *citrina*, Tayl.; thallo amplo, complanato, procumbente, pallide citrino, subtus albidiori, utrinque nudo atque lævigato, rugoso-lacunoso, lobis late linearibus, subdichotomis, canaliculatis; gemmis marginalibus, granulatis, statim complanatis atque thalli marginem fimbriantibus; apotheciis minutis, marginalibus, fuscis, demum convexis atque marginem thallodem subcrenulatum excludentibus.

HAB. On trees; Java; *Hook. herb.*—Thallus 5-6 inches wide. Lobes oblong, subsinuate, their margins at first entire, at length fringed with minute, concave, oblong buds. Below the thallus are a few, scattered, pale fibres. This species has somewhat the habit of a *Sticta*, but all the technical characters of *Cetraria* of Acharius.

STICTA, *Ach.*

1. S. *Wallichiana*, Tayl.; thallo amplo, suborbiculari, inciso-lobato, virescenti-cinereo, rugoso, sublacunoso, utrinque lævi, subtus concolori, rugosissimo; laciniis oblongis, laceris; cyphellis minutis, confertis, sessilibus, intus albis; apotheciis sparsis, minutis, confertis, disco castaneo, semipellucido, marginem tenuem integerrimum excludente.

HAB. Nepal; *Wallich.*—Thallus a foot wide; lobes linear, lacerous, their colour unaltered when moistened. Cyphellæ largely granular, sometimes confluent. This has the habit of S. *orygmæa*, Ach.; but the soredia of this species are yellow, and the margins of the apothecia are rugoso-crenulate.

2. S. *rugulosa*, Tayl.; thallo cæspitoso, procumbente, cinereo-virescenti, lineari, canaliculato, marginato, pinnato, laciniis dichotomis pedatisque; subtus nudo, glaberrimo; gemmis minutis, granulatis, albescentibus; apotheciis marginalibus, majoribus, demum planiusculis, disco fusco-rufescenti, margine atque extus sinuato-rugosis, demum gemmiferis.

HAB. Peru; *Hook. herb.*—Thallus 2-3 inches long, pale ash-coloured with a greenish hue; no cyphellæ or soredia observable on the under side. Apothecia, when full grown disproportionately large, compared with the narrow laciniæ of the thallus; they are coarsely wrinkled on the margin and on their backs, the wrinkles waved and at length bearing minute, granulate, whitish buds. Ours resembles some states of S. *damæcornis*, Ach., also S. *digitata, Hook. fil. et Tayl.*, but in no known species are the backs and margins of the apothecia so strongly wrinkled.

3. S. *quercifolia*, Tayl.; thallo stellato, inciso-lobato, cinereo-glauco, lævigato, subtus nigrescenti-tomentoso, lobis sinuato-pinnatifidis, sinubus subcircularibus; gemmis marginalibus, granulatis, statim explanatis; cyphellis concoloribus, ore demum marginatis, pulvere albissimo

refertis; apotheciis marginalibus, demum convexis, disco atro-rufo, margine crenulato, extus angulato-mamillatis.

Hab. Ceylon; *Hook. herb.*—Patches 2-3 feet wide, consisting of imbricated thalli; colour unaltered by moisture. This species is laciniated as *Sticta damæcornis*, Ach.; but the white contents of the cyphellæ and mamillated backs of the apothecia are sufficiently distinctive.

4. S. *propaginea*, Tayl.; thallo oblongo, depresso, lævigato, albido-cinereo, madore virescenti, subtus concolori, lobis periphericis sinuato-incisis, sinubus circularibus, margine elevatis; gemmis concoloribus, marginalibus, granulatis, statim elongatis, linearibus, ramosis; cyphellis minutis, albidis; apotheciis minutis, incarnatis, demum convexis atque marginem thallodem tenuem crenulatum excludentibus.

Hab. Surinam; *Hook. herb.*—Thallus 2-3 inches long, in the central and entire parts concave or channelled, in the exterior extremely subdivided. The minute flesh-coloured apothecia are very remarkable. It has some resemblance to S. *filicina*, Ach., but is by no means substipitate.

5. S. *nitida*, Tayl.; thallo stellato, fulvo-cinereo, lævigato, marginem versus dichotomo, lobis linearibus, concavis, apice bifidis, margine integerrimis, nigrescentibus, subtus atro-glauco, lanuginoso; sorediis minutis, sparsis, flavo-albicantibus; apotheciis sessilibus, concavis, extus villosis, disco rufescenti, margine tenui, integerrimo, lanuginoso-crenato.

Hab. No. 1450. Chiloe; *Cuming*, *Hook. herb.*—Lobes 6-8 inches long, brownish ash-coloured, unaltered when wet; the under surface dark dun-coloured. Young apothecia rise as villose globules on the surface. This is plainly allied to S. *damæcornis*, Ach.; it differs, however, by the pale yellow soredia on the inferior side of the thallus.

6. S. *Humboldti*, Tayl.; thallo orbiculari, subintegro, intus azureo, utrinque fusco-cinereo atque villoso, lobis amplis rotundatis; cyphellis concoloribus; gemmis granulatis,

villum albescentem statim emittentibus; apotheciis confertis, extus villosis, sparsis, demum planis, disco rufescenti-fusco, margine subintegerrimo, villoso.

Hab. No. 259. South America; *Humboldt, Hook. herb.*—This species has altogether the habit of S. *obvoluta*, Ach., which was collected by Menzies at the Straits of Magellan; it has, however, the following remarkable and distinctive characters; the thallus is unchanged in colour when moistened; it has true concave cyphellæ of a pale brown colour and the apothecia are scattered, not marginal.

7. S. *lutescens*, Tayl.; thallo orbiculari, inciso-lobato, luteo-viridi, lævigato, lobis oblongis, sinuato-crenatis, subtus fulvis, villosis; cyphellis concavissimis, intus flavescentibus; gemmis marginalibus, granulato-pulveraceis, statim ramosis, olivaceo-fuscis; apotheciis sparsis, extus villosis, demum convexis, disco rufescenti, marginem thallodem integerrimum demum excludente.

Hab. Java; *M. Spanoghe, Hook. herb.* Jamaica; *Purdie.*—Thallus 6-8 inches wide, a little greener when moistened, incised almost to the centre, the margins elevated with crowded buds, whose duskier olive colour contrasts with the greenish tawney surface of the thallus. The buds are scarcely formed when they branch out and assume a browner colour; a character, joined to the tawney inferior surface, which will keep this species distinct from all described ones.

8. S. *Leylandi*, Tayl.; thallo substellato, cinereo-virescenti, subtus albido, lobis rotundatis, laciniatis, adscendentibus; gemmis pellucidis, albidis, filiformibus; apotheciis sessilibus, concaviusculis, disco castaneo, margine gemmis coronato.

Hab. Brazil; *Mr. R. Leyland's herb.*—Thallus rapidly imbibing moisture and becoming soft and flaccid, the upper surface nearly covered with buds in clusters connected by a membranous expansion. The aged apothecia receive a short podetium from the thallus; the disk is of a chestnut colour when wet, brick red and puinose when dry. *Lamina proligera* pale, containing vertical cylindrical thecæ, whose summits scarcely reach to the disk. The thallus is furnished beneath with white filiform vessels, which appear like the surface of writing paper as viewed by a magnifying-glass; there are here, besides, subrotund bundles of olive-coloured radicles. There are no cyphellæ present.

9. L. *lacunosa*, Tayl.; thallo orbiculari, inciso-lobato, pallide virescenti-cinereo, minute lacunoso, lobis radiantibus, apice dilatatis, rotundatis, crenatis, subtus pallidis, subtomentosis; gemmis marginalibus, linearibus, planis, pallidis; apotheciis sessilibus, rufis, margine demum gemmis coronato.

HAB. Brazil; *Mr. R. Leyland's herb.*—Thallus membranaceous, thin, smooth, reticulated and pitted. Beneath there are convex papulæ and a whitish scattered down. Apothecia usually marginal. The *lamina proligera* is very thin. No cyphellæ present. Buds on the margins of the apothecia flat, subrotund, subconfluent.

10. S. *imbricatula*, Tayl.; thallo minuto, subimbricato, cinereo-virescenti, rugoso, lobis sinuatis, rotundatis, integerrimis, sinubus circularibus, subtus concolori, subvilloso; sorediis minutis, flavis; apotheciis sparsis, demum planis, disco subfusco, margine tenui crenulato.

HAB. "No. 1662, ad arborum corticem in sylvis montium editioribus, Insulæ Juan Fernandez; Maio, 1830;" *Bertero in Hook. herb.*—Patches 2-3 inches wide, consisting of several imbricated thalli; their surface is very uneven, their margins decurved and entire, yet sinuate. The interior of the thallus is yellow. The apothecia have the habit of those of *Lecanora subfusca*, Ach. The soredia beneath the thallus are not easily detected.

11. S. *fimbriata*, Tayl.; thallo substellato, lobato, lobis adscendentibus, imbricatis, undulatis, incisis, fimbriato-crenatis, glauco-cinereis, madore nigro-viridibus, pruino-

sis; gemmis substipitatis, subrotundis, granulatis, ad thalli marginem confertis; cyphellis rotundatis oblongisve, concavis, albidis, pruinosis, marginibus elevatis.

Hab. In woods near Killarney.—The marginal buds become flattened and sometimes branched, giving a fimbriated appearance to the lobes. The moistened surface is mottled by a white pruina peculiar to this species. The granules of the buds may often be observed to be tipped with dark-brown. Patches 3 inches or more in diameter, loose, attached by a central disk. It differs from S. *sylvatica*, Ach., by the more divided margin of the thallus, by its fimbriated appearance, its pruinoso-reticulated surface, and its very pale glaucous grey colour when dry.

12. S. *erythroscypha*, Tayl.; thallo stellato, inciso-lobato, cinereo-viridi, subtus margine concolori, centro nigro-villoso, lobis oblongis, sinuato-crenatis; sorediis punctiformibus flavis; gemmis marginalibus, granulatis, demum pulverem flavum effundentibus; apotheciis sparsis, demum convexis, disco intusque aterrimis, margine extusque rubris, subvillosis.

Hab. "No. 1609. Ad saxa in collibus, Insula Juan Fernandez, April, 1830;" *Hook. herb.*—Thallus 6 inches wide, incised nearly to the centre, surface smooth, slightly concave, parenchyma white; young apothecia nearly spherical, reddish-orange; the more aged flat or convex, their margin and the thallodal cup reddish, their disk and lamina quite black, and thus unlike that of any of its congeners.

13. S. *Drummondii*, Tayl.; thallo orbiculato, fusco-cinereo, subvilloso, inciso-lobato, lobis fertilibus marginem versus rugoso-lacunosis, subtus concolori, villoso; gemmis marginalibus granulatis; sorediis sparsis, albidis; apotheciis oblatis, terminalibus, resupinatis, disco castaneo, subplano, margine demum lacero.

Hab. On bark, accompanying *Nephroma polaris*, Ach. British North America; *Thos. Drummond, Hook. herb.*—

Thallus 4-5 inches wide, dusky fawn-coloured, the central parts duskier and nearly smooth, the marginal villose soredia subglobose, whitish, opening sometimes above and displaying a white cavity. Apothecia large, more wide than long, the disk very thin, the margin, at length, waved. This, as well as S. *sylvatica*, Ach., has the apothecia of a *Peltidea*, but the thallus of *Sticta* of Ach.; but ours is very distinct by the villose thallus, the globose soredia, the buds few and marginal, and the apothecia oblate.

14. S. *divulsa*, Tayl.; thallo fusco-cinereo, madore immutato, sinuato-inciso, dichotome pinnatifido, lacunoso-reticulato, lobis linearibus, marginatis, erecto-patentibus, glabris, nitidis, apice emarginato-bifidis, cæterum integerrimis; sorediis minutis, albidis; apotheciis marginalibus, disco convexiusculo, rufo-fusco, margine tenui integerrimo, extus papilloso-rugosis.

Hab. "No. 476. Chonos Archipelago; *Darwin.* Island of Huerffo; *Dr. Beck.*" *Hook. herb.*—Thallus deeply divided. Sinuses oblong. From S. *pulmonacea*, Ach., ours is different by the narrower, more divaricating lobes and the white soredia beneath the thallus.

15. S. *denudata*, Tayl.; thallo orbiculari, cinereo-olivaceo, lævigato, complanato, rugoso, subtus villoso, sinuato, late lobato, sinubus minutis circularibus, lobis imbricatis, margine integerrimis; apotheciis marginalibus initio globosis atque diaphragmate occlusis, demum margine incurvis, gemmis crenulatis, extus pulveraceis, disco rufescenti.

Hab. No. 257. South America; *Humboldt.* Casapí, Peru; *Mathews*, *Hook. herb.*—Thallus 6 inches wide, uneven but not lacunose. Lobes vary in breadth. Buds not apparent on the thallus, but observed prolonging into fronds on the margins of the apothecia. Ours may be distinguished from the numerous varieties of S. *pulmonacea*, Ach., by the more considerable dark villi of the inferior surface, by the upper not being lacunose, by the want of granulate buds on the thallus, and by the apothecia remaining very concave even in old age.

16. S. *calithamnia*, Tayl.; thallo suberecto, substipitato, plano, glaucescenti, madore fusco, subtus rufescenti, subvilloso, sublacunoso, ramosissimo, ramis sinuato-lacinulatis; cyphellis nullis.

Hab. On trees and stones; Juan Fernandez; *Hook. herb.*—In flattish tufts. Thallus about one inch long, much subdivided, the sinuses roundish. Allied to S. *filicina*, Ach.; our plant, however, is shorter, more subdivided, the ultimate laciniæ are rounder, the inferior surface is more villose and presents no cyphellæ.

17. S. *bicolor*, Tayl.; thallo orbiculato, lævigato, inciso-lobato, lobis sublaciniatis, laciniis brevibus, subangulatis, rufescenti-cinereo, subtus fuscescenti; cyphellis albidis, planis, margine elevatis; apotheciis marginalibus, disco rufo, margine integerrimo, subtus floccosis.

Hab. Organ Mountains; *Gardner, G. J. Lyon's herb.*—Thallus 4 inches wide, lobes scarcely one quarter of an inch broad, the central parts of an ash-grey, the extreme of a chestnut brown, but little deepened by moisture. The thick dark grey scabrous pubescence of the inferior surface of the thallus reappears on the backs of the apothecia. The smooth surface of the thallus and the crowded marginal sessile apothecia readily distinguish this species from S. *sylvatica*, Ach.

Peltidea, Ach.

1. P. *glaucescens*, Tayl.; thallo virescenti-glauco, villoso, inciso-lobato, lobis rotundatis, integerrimis, subtus albo-stuppeo; fixuris nigro-olivaceis; apotheciis terminalibus, planis, rotundis, fuscis, subcrenulatis.

Hab. No. 230. On dead wood; Diana's Peak, St. Helena; *Dr. J. D. Hooker.*—Thallus scarcely exceeding 1½ inches in diameter, whitish-ash-coloured when dry, glaucous green when wet. Apothecia somewhat convex when aged.

This has the apothecia of P. *venosa*, Ach., and the thallus of P. *canina*, Ach.; but the inferior surface differs from that of either of these, being snow-white and cottony, except where the veins occur.

2. P. *pulverulenta*, Tayl.; thallo cinereo-livido, elevato-punctato, subtus concolori, subavenio, villoso, lobis subincisis, retusis; apotheciis concavis, disco atro-rufescenti, margine crenulato, extus verrucosis.

HAB. Pillzhum, Columbia; *Prof. W. Jameson.*—Thallus suborbicular, flaccid and rugose when wet. Apothecia on proper stalks of the thallus. Inferior surface villose as in the stictæ; the upper surface is thickly sprinkled over with subangular concolorous grains, not observed in its congeners.

3. P. *erumpens*, Tayl.; thallo orbiculari, cinereo-virescenti, inciso-lobato, lobis rotundatis subintegerrimis, subtus elevato-venosis; gemmis sorediatis, pulverem glaucum effundentibus, centralibus; apotheciis terminalibus, subpedicellatis, rotundis, convexiusculis, atro-purpureis, subintegerrimis.

HAB. On sides of clay banks; Dunkerron, county of Kerry.—Thallus 1-2 inches wide, glaucescent when wet, ash-coloured when dry, thin in structure; apothecia few. Buds central, five or six together, rarely confluent, round, shallow eruptions of the thallus containing a glaucous powder. By these buds it is separated from all known species.

DUFOUREA, *Ach.*

1. D. *plumbea*, Tayl.; thallo pulvinato, obscure plumbeo, ex centro affixo radiato-ramoso, erecto, lobis subsimplicibus, stuppeo-solidis, turgidis, clavatis, hic illic coarctatis impressisque, basi compressiusculis rugosisque; apotheciis terminalibus, subimmersis, planis, immarginatis, disco tenuissimo, pruinoso, viridi-atro.

HAB. On the ground; Bushman's Country, Cape of Good Hope; *Zeyher, Hook. herb.*—Thallus in madreporiform, dusky olive tufts, about half an inch high; tops of the lobes rounded: sometimes on the white fractured surface whence the apothecia have fallen, several very minute, crowded, young, blackish apothecia are observable. Sometimes two adjoining lobes coalesce, as do the apothecia on their summits. *Lamina proligera* excessively thin, and dark green. Allied to D. *pruinosa*, Nees; but the flat immersed disks of the apothecia and the tuberculose and coarctate lobes of the thallus keep it very distinct.

2. D. *simplex*, Tayl.; thallo cæspitoso, solidiusculo, pallidissime cinereo, tereti, filiformi, simplici, longitudinaliter corrugato; apotheciis in ramuli brevis apice terminalibus, disco concavo, concolori, margine integerrimo.

HAB. West coast of North America; *Menzies.*—Nearly two inches high, scarcely as thick as packthread. It has the habit of *Cenomyce gracilis*, Ach., but is not so acuminate, nor has it pale greenish granular buds.

CENOMYCE, *Ach.*

1. C. *sphærulifera*, Tayl.; thallo foliaceo, minuto, cinereo-viridi, subtus albo, laciniis inciso-crenatis; podetiis cylindricis, angustis, simplicibus, cinereis, subpellucidis, glabris; gemmis albidis, minutissime granulatis, statim cylindricis; scyphis brevissimis; apotheciis conglomeratis, minutis, coccineis, madore nigris, substipitatis.

HAB. Demerara; *Mr. C. Parker, Hook. herb.*—This species appears distinct from C. *bacillaris*; Ach., by the more numerous and conglomerate apothecia, which are scarlet while dry, but turn black when wetted; and by the subpellucid podetia which are quite smooth, though sprinkled with buds.

2. C. *hirta*, Tayl.; podetiis erectis, filiformibus, villosis, cæspitosis, fusco-cinerascentibus, compresso-teretibus, ramosissimis; ramis patentibus, flexuosis, axillis imperforatis, ultimis minutis bi-tripinnatis; gemmis granulatis, subterminalibus, fuscis.

Hab. Casapí, Peru; *Mathews, Hook. herb.*—Thallus flaccid. The podetia are remarkable for being covered with short white villi, resembling those of the under side of a *Sticta* This reminds one of C. *rangiferina*, Ach., growing, as it does, in rounded tufts: but the ultimate branches are not drooping; whilst the villose podetia are very distinctive.

3. C. *diatrypa*, Tayl.; thallo cæspitoso, erecto, fistuloso, dichotomo, ramosissimo, cinereo-fuscescente, ramis foraminulatis, ultimis acuminatis, fertilibus explanatis; apotheciis confertis, minutis, disco rufo-fusco, margine tenui, demum undulato.

Hab. Macquarrie River; *Mr. R. Ball's herb.*—Podetia in rounded, brownish, rigid tufts, from 2-3 inches high. Fertile branches flattened and variously wrinkled. The border of the aged apothecia at length assumes the colour of the disk.

4. C. *acuta*, Tayl.; thallo foliaceo, minuto, crenulato; podetiis subulatis, brevibus, ramosis, teretibus, fusco-cinereis, subpellucidis; gemmis confertis rufescenti-albidis.

Hab. Islands of the Pacific; *Hook. herb.*—Tufts dusky brown, rigid, scarcely 1 inch high. The buds may be observed expanding into minute crenulate scales at the bases of the *podetia*; these resemble in colour and semi-transparency shreds of glue: they are much acuminated and tipped with black. Allied to C. *pityræa, b. acuminata*, Ach., differing essentially by the subpellucid and brown podetia.

Bœomyces, *Ach.*

1. B. *Capensis*, Tayl.; thallo tartareo, areolato, cinereo, substrato tenui, atro, marginante; apotheciis demum globosis, umbilicatis, atris; stipite immerso.

Hab. Cape of Good Hope; on granite; *Hook. herb.*—Thallus more than two inches wide; areolæ tumid, very uneven, often having one or two dark depressed spots on the surface, which are rudiments of apotheciæ; little altered by moisture. Apothecia on the scales, at first flat and bordered as in *Lecidea,* soon, however, globose, and excluding the border, rough, subpruinose, crowded; they are supported on a stipes of white cortical matter immersed in the crustaceous scales. Disk black, covering a very shallow, semi-transparent, striated lamina, resting on much black matter. Closely allied to B. *anomalus,* Tayl., in *Flor. Hib.,* which now ceases to be singular for having no conspicuous stipes; and which has the crust whiter and thinner, as well as more even, while the apothecia are paler, and when full grown not so convex.

2. B. *hyalinus,* Tayl.; thallo crustaceo, minuto, sublobato, pallide flavo-virescenti; gemmis subrotundis, apice fuscis; stipite compresso, subrugoso, madore hyalino, punctis opacioribus consperso; apotheciis subplanis, pallidissime carneis, margine albido, subintegerrimo.

Hab. On sandy clay; Swan River; *Mr. James Drummond.* —Patches wide. Apothecia crowded, variously twisted, oftener oblong than round. Stipes about half an inch high, from a narrow base expanding upwards, when dry opaque, pellucid when wet, sprinkled with granular opaque buds. Like B. *rupestris,* Ach., the footstalks of the apothecia are stouter, and remarkably hyaline when saturated with moisture: besides, the thallus is in sublobate crustaceous scales.

Alectoria, *Ach.*

1. A. *tuberculosa,* Tayl.; thallo cinereo, ligulato, elongato, striato, scabro; gemmis granulatis, convolutis, confertis, albidis; apotheciis marginalibus, podicellatis, concavis, disco pruinoso, concolori, margine tenui, undulato, integerrimo.

Hab. No. 1469. Peru; *Cuming, Hook. herb.*—Thallus 6-8 inches long, coriaceous, with longitudinal elevated ridges, which at length burst along their tops. Podetia very considerable; hence, though with some doubt, it is now referred to *Alectoria* and not to *Ramalina*, whose habit, however, it strongly possesses.

2. A. *virens*, Tayl.; thallo pendulo, elongato, filiformi, tereticompresso, subdichotomo, implexo, pallide virenti, hinc canaliculato, ad angulos compresso, ramulis ultimis setaceis, flexuoso-curvatis, apice nigricantibus; gemmis in thalli canaliculo pulveraceis, concoloribus; apotheciis minutis, convexis, fuscis, immarginatis.

HAB. Sheopore, East Indies; *Wallich.*—Tufts loose, dull green, more than one foot long, rough with short, setaceous branches tipped with black. It is very bitter, and imparts a green tinge to the saliva when masticated.

3. A. *spinosa*, Tayl.; thallo erecto, tereti, lævissimo, subtus canaliculato, basi cinereo, apice fuscescenti, ramulis fuscis, setaceis, acuminatis, striatis, rectiusculis; gemmis raris, granulatis; apotheciis ad thalli angulos sessilibus, concavis, subtus lævibus, disco rufescenti-fulvo, albido-pruinoso, margine tenui, crenulato.

HAB. Nepal; *Wallich.*—Tufts loose, 3-4 inches high; thallus branched at the base, often dichotomous above. Apothecia as large as peas, some with a reddish-brown lamina, all of them covered with a white pruina. The loruli are shorter and straighter than in any of the congeners.

RAMALINA, *Ach.*

1. R. *canaliculata*, Tayl.; thallo cæspitoso, glabro, nudo, subtus canaliculato, lineari, subdichotomo, albo-lutescenti, ramulis acuminatis; gemmis marginalibus granulatis, statim spiculiformibus; apotheciis marginalibus, podicellatis, concavis, margine gemmis granulato.

HAB. Veragua; *Sinclair*, California; *Menzies.* Tahiti; *Beechey*, *Hook. herb.*—Loosely tufted, pale tawney, nearly six inches long; stems split at the margins, and there shewing a whitish powder; but the true buds are few, marginal and granular, and soon change into spines, the young rudiments of thallus: the branches form an obtuse angle with the main stem. It may be known from R. *fas-*

tigiata, Ach., by the narrow, semiterete thallus; and the marginal apothecia not being limited to the upper branches.

2. R. *leucosticta*, Tayl.; thallo pendulo, glabro, plano, filiformi, dichotomo, longitudinaliter rugoso, olivaceo-rufescenti, madore pellucido, ramulis incurvis; gemmis minutissimis, albis, numerosissimis; apotheciis marginalibus, minutis, planis, rufescentibus, pellucidis, margine tenui, integerrimo.

HAB. Tahiti; *Beechey, Hook. herb.*—Tufts 1-3 inches long; the younger parts olive-coloured, the more aged reddish-brown. Thallus channelled beneath. In no described species are the soredia so minute, so crowded, or so white.

3. R. *Menziesii*, Tayl.; thallo compresso, lævigato, nudo, elongato, cinereo, laciniis filiformibus, planis, reticuloso-connatis; gemmis marginalibus, oblongis, pertusis, statim reticulatis; apotheciis substipitatis, marginalibus, demum convexis, subimmarginatis, lutescentibus.

HAB. Monterey, California; *Menzies.*—Tufts pendulous. Thallus more than one foot long, varying in breadth, smooth, longitudinally striated with whitish lines. Young lobes completely netted. Buds at first granulate, soon elongated and stipitate, and their pertused substance expanding into a net-work. Apothecia occur on the more aged branches, semi-pellucid, but their footstalks opaque.

4. R. *prolifera*, Tayl.; thallo pendulo, elongato, plano, ancipiti, lineari, acuminato, cinereo, albido-punctato, lævi, nudo, subrugoso, apice prolifero; surculis basi angustatis, linearibus, obtusiusculis; gemmis marginalibus terminalibusque; apotheciis marginalibus, cinereo-carneis, demum convexis atque marginem tenuem integerrimum excludentibus.

HAB. Uruguay River; *James Baird, Hook. herb.*—Thallus 1½ foot long, devoid of lustre, from a truncate extremity sending out three or more new shoots; when moistened the surface is found to be strewed over with minute grey soredia. Apothecia of the size of rape-seed.

5. R. *pilulifera*, Tayl.; thallo e centro communi cæspitoso, cinereo-stramineo, erecto, lineari, plano, longitudinaliter rugoso, subtus canaliculato, ramis filiformibus, acuminatis; gemmis minutis, oblongis, albidis, pulveraceis; apotheciis concoloribus, minutis, marginalibus terminalibusque, demum convexo-subglobosis marginem excludentibus.

Hab. No. 1642. In montibus excelsis Insulæ Juan Fernandez; *Hook. herb.*—Tufts 1-2 inches high, rounded; branches irregular; laciniæ very narrow; minute depressions and longitudinal wrinkles occur especially on the back of the thallus.

6. R. *pellucida*, Tayl.; thallo compresso, lævigato, nudo, lineari, albido, subpellucido, striato, ramis acuminatis; gemmis marginalibus, statim lineari-lanceolatis; apotheciis submarginalibus, concaviusculis, subimmarginatis pallide luteis.

Hab. Brazil; *Mr. R. Leyland's herb.*—Tufts pendulous. Thallus 6-8 inches long, here and there perforated. Buds at first granulate. Apothecia substipitate, usually marginal, the disk pruinose. The thinner and pellucid thallus and the thallodal stipes to the apothecia readily distinguish this lichen from its European congeners.

Cornicularia, *Ach.*

1. C. *lata*, Tayl.; thallo glabro, albido, tereti, subanguloso, ramosissimo, ramis ultimis minutis, subfastigiatis, divaricatis; gemmis linearibus, utrinque acuminatis, albis, elevatis; apotheciis podicellatis, extus gemmiferis, disco concavo fusco-carneo, margine incurvo, crenulato.

Hab. Mexico; *Hook. herb.*—Thallus 2-3 inches in diameter, white and slightly greenish, unaltered by moisture. Apothecia frequently proliferous of a single shoot beneath, very concave; the disk dark brown when dry, assuming a paler colour, and carneous hue when moistened. This species, which has the apothecia of a *Borrera* of Acharius on the thallus of a *Cornicularia*, can scarcely be confounded with any other.

USNEA, *Ach.*

1. U. *tumidula*, Tayl.; thallo cinereo, subcæspitoso, erecto, filiformi, dichotomo, glabro-tuberculato, hic illic diffracto, intus albidissime stuppeo-fasciculoso, ramis ultimis brevibus, spiniformibus, apice nigris; gemmis compresso-granulatis, lævibus, demum pulverem albidum effundentibus; apotheciis minutis, nudis, sessilibus, demum planis, pruinosis, concoloribus, margine demum crenulato.

HAB. No. 1474 (in part). Coquimbo; *Cuming, Hook. herb.*—Tufts dense, rigid, 1-2 inches high. Thallus cylindrical, with irregular smooth swellings and depressions; these last appear to be the buds, discharging a white powder. This has the branching of an *Alectoria*, Ach., but the central thread of an *Usnea*.

2. U. *pectinata*, Tayl.; thallo pendulo, filiformi, tereti, cinereo, ramis simplicibus, subflexuosis, longissimis, fibrilloso-pectinatis, subcomplanatis, fibrillis tenuissimis, confertis, apice setaceis, subdecurvis; gemmis granulatis, statim spiculiformibus.

HAB. Sylhet; *Wallich.*—Tufts 1-2 feet long, matted together. Main stem broken transversely into minute joints. This approaches in characters to U. *longissima*, Ach. from Lusatia, which we have not seen; but from description it would appear to be whiter, its stem more scabrous, and the fibrils of the branches more tortuous.

3. U. *nidifica*, Tayl.; thallo pendulo, elongato, lutescenti-ochraceo, lævi, pinnato, ramis patentibus, filiformibus, tortuosis, implexis, scabris; gemmis sorediiformibus, minutis, innovationibus hic illic breviter fasciculatis.

HAB. Norfolk Island; *Hook. herb.*—1½ feet long; branches capillaceous at their tops: stems transversely broken at the inferior parts, quite smooth; germinating buds clustered here and there, giving a peculiar and prominent character.

4. U. *miliaria*, Tayl.; thallo cæspitoso, erectiusculo, cinereo, tereti, ramosissimo; gemmis granulatis, confertissimis; ramis ultimis acuminatis, subglabris; apotheciis sessilibus, concoloribus, pruinosis, demum planis, extus scabris, margine nudo, demum crenulato.

Hab. No. 1477. Arica; *Cuming, Hook. herb.*—Thallus 3-4 inches long, irregularly and repeatedly branched, rough, as a file with thickly set whitish grains or buds. Apothecia usually proliferous of a single shoot from beneath. By the naked apothecia ours is allied to U. *melaxantha*, Ach.; but it is smaller; the thallus is not wrinkled and the apothecia are not reticulated beneath.

5. U. *flexuosa*, Tayl.; thallo pendulo, implexo, cinereo, filiformi, ramosissimo, subnoduloso, ramis brevibus, flexuosis; gemmis minutis, granulatis; apotheciis concoloribus, tenuissimis, planiusculis, pruinosis, margine ramoso-ciliatis.

Hab. Near Quito; *Prof. W. Jameson.*—Tuft soft, 4-5 inches long. Thallus very slender, rather smooth, except where the granular buds occur. Apothecia excessively thin: the buds on the margin elongating into a ciliary thallus which is at length branched. It is allied to U. *florida*, Ach., but is softer, smoother, finer and more flexuose; while the apothecia are almost as thin as cuticle.

6. U. *compressa*, Tayl.; thallo pendulo, lineari, compresso, cinereo, dichotomo, elongate articulato, ramis basi angustatis, acuminatis, patentibus; gemmis granulatis; apotheciis terminalibus, planiusculis, concoloribus, pruinosis, margine ciliatis, extus lævibus.

Hab. Nepal, *Wallich*; Mysore, *Dr. Wight*; Norfolk Island, *A. Thompson*; *Hook. herb.*—Thallus 4-5 inches long, ultimate branches short, at right angles to the stem, joints attenuated at each end, rough with numerous granular buds. The flattened thallus and jointed stems distinguish this from U. *florida*, Ach.

7. U. *densirostra*, Tayl.; thallo cæspitoso, erecto, viridi-olivaceo, abbreviato, ex basi disciformi ramoso, infra incrassato, supra acuminato, ramis subuliformibus, densis-

simis, subpatentibus, gemmis granulatis statim elongantibus; apotheciis terminalibus, concavis, disco albido, margine gemmis ciliato.

HAB. No. 686. Monte Video; *Darwin, Hook. herb.*—Scarcely 2 inches high; branches clothed all round with nearly equal and parallel, thickly set, subulate laciniæ. Apothecia small. By its stunted growth, its crowded laciniæ, and by its comparatively small apothecia, it may be distinguished both from U. *scabrida*, Tayl., and U. *florida*, Ach.

8. U. *scabrida*, Tayl.; thallo erectiusculo, scaberrimo, pallide cinereo-flavescenti, fibrillis confertissimis, curvato-adscendentibus, subramosis; gemmis minutissime granulatis, statim subulatis; apotheciis demum planiusculis, ciliis confertis margine dorsoque tectis, disco albido-stramineo, pulverulento.

HAB. Swan River; *Mr. James Drummond.*—About one inch high, fastigiate, very rough. Apothecia sometimes nearly half an inch wide. The fibrils on the thallus and on the margins of the apothecia are truly buds elongating into new individuals. The abundance of these buds on the backs of the apothecia will serve to separate the present from U. *florida*, Ach.

COLLEMA, *Ach.*

1. C. *trachyopum*, Tayl.; thallo squamoso, squamis frustuloso-areolatis, scabridis, fuscis, minutis, sublobatis; apotheciis minutis, immersis, demum sessilibus, disco concavo, rufescenti, nigro-pruinoso, margine incrassato, scabro, elevato.

HAB. On limestone; Dunkerron, county of Kerry.—Patches about one inch wide, thin, closely adnate, blackish, cracked when dry. Scales light brown, studded with dark points, which, at length, enlarge into flattish granular buds. Differs from C. *nigrum*, Ach., by the want of the bluish border; nor are the scales ramulose towards the centre; nor is the border of the apothecia thin, shining, and at length evanescent; nor is there any blackish-brown matter beneath the *lamina proligera*.

2. C. *maritimum*, Tayl.; thallo pulvinato, gelatinoso-membranaceo, olivaceo, marginem versus glaucescenti, lobis minutis, imbricatis, rotundatis, margine incrassatis, undulatis, subintegerrimis, convexis, minute rugosis; gemmis majoribus granulatis; apotheciis confertis, minutis, immersis, disco flavescenti-brunneo.

Hab. On limestone near the sea; Dunkerron, county of Kerry.—Patches 1-3 inches wide, when moistened nearly one inch high, when dry flat, thin and membranous. Lobes concave beneath, the marginal distinct, the central cohering, all of them minutely wrinkled and covered with punctiform elevations, which at the edge of the disks of the apothecia cause the margins to appear crenulate. The substance of the thallus contains numerous, filiform, moniliate, slightly waved bodies: such as are observable in several species of *Collema*, and are made by some botanists to characterize the genus *Nostoc*. The disk is dark yellowish-brown, pruinose with elevated points; the lamina pale brown, thickly striated, resting on a thin concolorous layer, which, however, is more opaque. This is by far the most gelatinous species known.

3. C. *reflexum*, Tayl.; thallo foliaceo, crasso, albido-glaucescenti, minutissime ruguloso, subtus fusco, tomentoso, lobulis oblongis, subintegris, margine reflexis, sublacunosis; gemmis granulatis; apotheciis confertis, centralibus, concavis, disco rufo, margine crasso, elevato, granulato-crenato.

Hab. No. 837. Java; *Zollinger*, *Hook. herb.*—Thallus 2-3 inches wide, substellate, coriaceous, having a white pruina on the extreme lobes: surface most minutely and longitudinally wrinkled, and it has thickly set depressed blackish points. On the inferior side is a dark brown down as in the *Stictæ*. The present appears sufficiently distinct from

C. *exasperatum*, Ach.; if we may judge by the characters; but we have not seen the plant.

4. C. *erythrophthalmum*, Tayl.; thallo viridi-olivaceo, minuto, tenui, adscendente, lobis confertis, subimbricatis, sinuato-laciniatis, multifidis; gemmis marginalibus, granulatis, lutescentibus; apotheciis planis, podicellatis, subtus nudis, disco rubello, margine subintegerrimo, aurantiaco.

HAB. On trees; Philippine Islands; *Cuming, Hook. herb.*—Thalli aggregated; lobes very thin, jagged. The lamina is naked beneath; and the cup which contains it is not formed of the thallus. The fine red apothecia, with their orange border, render this species conspicuous among its congeners.

5. C. *corticola*, Tayl.; thallo foliaceo, membranaceo, bulloso, minutissime rugato, glauco-plumbeo, lobis rotundatis, adscendentibus, integerrimis, complicatis, laxis, flexuosis; apotheciis confertis, disco rufo, margine integerrimo, incurvo.

HAB. Ohio; *Lea, Hook. herb.*—Thallus 3-4 inches wide, monophyllous, divided into rounded, concave, entire lobes: when moistened the colour changes to a pale olive; and the surface exhibits short, simple or branched, elevated, obtuse wrinkles; which, however, are not acutely pinched up, nor so thickly set as in C. *rugatum*, Tayl.; nor is the thallus so pale; while the lobes are more entire.

6. C. *crassiusculum*, Tayl.; thallo foliaceo, gelatinoso, crasso, demum gemmis obtuse plicatis tumidis rugoso, fusco-olivaceo, lobis rotundatis, adscendentibus, integerrimis, subtus rugosis; apotheciis sessilibus, majoribus, fusco-rufescentibus, margine granulato, demum rugoso-plicato.

HAB. Madras; *Dr. Wight, Hook. herb.*—Patches 2-3 inches wide: lobes numerous, ascending, complicated, thick, gelatinous, subpellucid when moistened, Apothecia large in proportion to the lobe on which it grows, sometimes occupying ⅓ of its surface: the disk when dry nearly black. Differs from C. *favosum*, Ach., by the more gelatinous and

thicker thallus, which is wrinkled on both sides, as well as by the rugose and thicker border of the apothecia.

7. C. *cæspitosum*, Tayl.; thallo cæspitoso, pulvinato, fusco-olivaceo, suborbiculari, imbricato-plicato, plicis centralibus erectis, integerrimis, utrinque elevato-rugosis, margine undulato-plicatis, asperis, siccitate nigrescentibus atque subtus glaucescenti-albicantibus; apotheciis marginalibus, concavissimis, margine incrassato, granulato, disco nigrescenti-purpureo.

HAB. In forests; Uitenhage; Cape of Good Hope; *Zeyher, Hook. herb.*—Thallus 1-2 inches wide. The thallus is more thick and carnose than in C. *lacerum*, Ach. By its marginal apothecia it is allied to C. *fasciculare*, Ach.; but the lobes are more round, and never inciso-crenate.

8. C. *vesicatum*, Tayl.; thallo gelatinoso-membranaceo, elastico, subtenaci, plumbeo, utrinque vesicato-plicato, rugoso, lobis procumbentibus, oblongis, subinciso-crenatis; gemmis concoloribus elongato-granulatis; apotheciis minutis, subpodicellatis, confertis, fulvis, margine crasso, integerrimo, extus gemmis scabro.

HAB. On aged trees; St. Vincent's; *Hook. herb.*—Thallus 3-4 inches wide; longitudinally plaited when dry; but when wetted the wrinkles expand into elongated vesicles. Allied to C. *rugatum*, Tayl. It is, however, more procumbent: the plaits when wetted are more obtuse; and the buds are far larger and longer.

9. C. *olivaceum*, Tayl.; thallo foliaceo, membranaceo, utrinque lævi, tenuissimo, olivaceo, pellucido, lacunoso, lobis adscendentibus, integerrimis; gemmis marginalibus granulatis; apotheciis sparsis, subtus nudis, concavis, disco rufo, margine crasso, integerrimo, lutescenti.

HAB. No. 252. South America; *Humboldt, Hook. herb.*—Thallus about 2 inches wide, very thin yet gelatinous when moistened, with elevated ridges containing concave depressions, pellucid even when dry. The tawney thick shell containing the lamina lies on a ring of the thallus, but is quite naked beneath. Very like a *Nostoc*.

10. C. *Turneri*, Tayl.; thallo foliaceo, membranaceo, gelatinoso, rugoso, amethystino, lobis confertis, erectiusculis, complicatis, integerrimis; gemmis granulatis, compressis, tumidis; apotheciis podicellatis, subtus nudis, disco concolori, margine atque extus gemmis tumentibus rugosis coronato.

HAB. On trees; Tahiti; *Beechey, Hook. herb.*—Patches several inches wide. The younger thallus very pale olive-green, the more aged of an obscure amethystine hue: the buds that cover the apothecia are of different colours in proportion to their ages, some pale olive-green, others reddish, others again purplish-blue. Allied to *Stephanophorus Kraussii*, Flotow, and to *St. dædaleus*, Flotow; but its colour, its pellucid thallus, and its soft consistence like that of a *Tremella*, serve easily to distinguish it.

Notes of ALGÆ, *observed at various altitudes in Aberdeenshire, by* G. DICKIE, M.D., *Lecturer on Botany in the University and King's College of Aberdeen.*

The heterogeneous assemblage, entitled *Infusoria*, has of late years been very much broken up. Botanists of high authority have asserted their right to rescue many of them from the hands of the Zoologist; and they contribute in no small degree to increase the numbers of the *Algæ*. It is not intended in this paper to enter upon any discussion respecting the arguments for and against the title of the *Desmidieæ* to a place in the Animal kingdom: those in favour of their vegetable nature seem to be stronger than those advanced by the Zoologist in laying claim to them. At the same time it cannot be denied that both classes of naturalists have shown a tendency to adopt that mode of reasoning called 'begging the question.'

Only a few years have elapsed since the British species were figured and fully described. To Mr. Ralfs the merit of this principally belongs. The more extensive work on the same subject, in which he is at present engaged, will be anxiously looked for by all who take an interest in these beautiful although minute organisms, and it is to be hoped will stimulate others to search for these *stars* of our fresh waters, which in variety and beauty of form cannot be surpassed by any of the numerous objects, animal or vegetable, presented to us in nature's kaleidoscope. As, however, in this utilitarian age, "mere beauty and fitness" may not be deemed sufficient reasons for the study of the organisms in question, it may be remarked that the physiologist will find in them examples of propagation by spontaneous fission, and by conjugation and subsequent formation of spores: also that kind of circulation called cyclosis, as well as molecular motion.

Agardh long ago remarked "Algæ inferiores organa sint Algarum superiarum," and "omnia organa simplicissima plantæ cujusdam (Alga sit vel planta perfectior) non esse nisi Algas simplicissimas;" statements, the accuracy of which cannot be questioned. The *Cellulares* of botanists, (a term, not strictly correct as usually understood), might be divided into the *compound*, in which numerous cells are associated, either side by side, and end to end, or in linear series alone; and the *simple*, in which the cells are few or separate. In these last it is, that the various phenomena of cell life may be most advantageously studied. Admitting the existence of intercellular substance in the vascular plants and higher *cellulares*, it is not improbable that the mucilage with which some of the simple forms are invested, and the granules so common on the surface of others, may be the representatives of the substance in question. The modes of propagation already alluded to as seen in the simple *Cellulares*, have their homologues also among plants of a higher grade; spontaneous fusion of cells being frequent in them; and the contact of the end of the pollen-tube with some part or other of the ovule, as observed in some, presents an instance of conjugation. It may not be irrelevant to state also that the development and structure of leaves in some of the compound *Cellulares* may assist in the investigation of the same in reference to those of vascular plants.*

I must here acknowledge the assistance derived from Mr. Ralfs' papers in the Transactions of the Edinburgh Botanical Society, and from Mr. Hassall's book. The altitudes of the localities at which some of the following species were collected in August last, had been ascertained on a former occasion: several of these measurements were repeated; and others made with the mountain Sympiesometer. A remark on the mode of collecting may not be irrelevant; for other Botanists may be induced to send contributions from Alpine districts in other parts of the country. A few small phials ought to be provided, each of which is numbered: samples of muddy water, and of mud from moist places, and of matter adhering to submerged plants, &c., at different altitudes, ought to be transferred to these phials, the localities being recorded. In this way, if kept cool, *Desmidieæ* will remain fresh for weeks, and can be examined at leisure. It may be remarked that a small quantity of muddy water, or of mud, in reference to the search for these plants, will bear a fair proportion to a few acres of surface in reference to flowering plants. The contents of the phials must be examined drop by drop under the microscope: the thick mud being diluted with water.

Of some species here recorded, only a few examples, not more than two or three, were observed: these, however, were so fully developed, that I did not hesitate to name them; and this is especially true of several found at high altitudes.

I am indebted to Mr. P. Grant for lists of such species occurring at Aberdeen, as had not come under my own observation.* The genera and species are given in alphabetical order for convenience sake.

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* See Transactions of Edinburgh Botanical Society, 1843.

I. Species found in the vicinity of Aberdeen:

Closterium *acerosum*, Ehr., C. *Cornu*, Ehr., C. *Dianæ*, Ehr., C. *Digitus*, Ehr., C. *Ehrenbergii*, Mgh., C. *lineatum*, Ehr., C. *Lunula*, Ehr., C. *margaritaceum*, Ehr., C. *moniliferum*, Ehr., C. *rostratum*, Ehr., C. *setaceum*, Ehr., C. *striolatum*, Ehr., C. *Trabecula*, Ehr., C. *turgidum*, Ehr.

Cosmarium *Botrytis*, Mgh., C. *crenatum*, Ralfs, C. *Cucumis*, Corda, C. *cylindricum*, Ralfs, C. *margaritiferum*, Ralfs, C. *ornatum*, Ralfs, C. *ovale*, Ralfs, C. *quadratum*, Ralfs.

Cylindrocystis *Brebissonii*, Mgh.

Desmidium *quadrangulatum*, Ralfs, D. *Swartzii*, Ag.

Didymoprium *cylindricum*, Kutz., D. *Borreri*, Ralfs.

Euastrum *affine*, Ralfs, E. *binale*, Ralfs, E. *circulare*, Hass., E. *Didelta*, Ralfs, E. *gemmatum*, Ralfs, E. *oblongum*, Ralfs, E. *Pelta*, Ralfs, E. *rostratum*, Ralfs, E. *spinosum*, Ralfs, E. *verrucosum*, Ehr.

Glæoprium *dissiliens*, Ralfs, G. *mucosum*, Ralfs.

Holocystis *oscitans*, Hass.

Micrasterias *radiata*, Hass., M. *rotata*, As.

Pediastrum *angulosum*, Hass., P. *Boryanum*, Mgh., P. *constrictum*, Hass., P. *ellipticum*, Hass., P. *heptactis*, Mgh. P. *Napoleonis*, Mgh., P. *tetras*, Ralfs.

Scenedesmus *acutus*, Meyen, S. *dimorphous*, Kutz., S. *obtusus*, Meyen, S. *quadricaudatus*, Breb., S. *triseriatus*, Mgh.

Staurastrum *Arachne*, Ralfs, S. *bifidum*, Ralfs, S. *aculeatum*, Ralfs, S. *gracile*, Ralfs, S. *margaritaceum*, Mgh., S. *mucronatum*, Ralfs, S. *muricatum*, Breb., S. *orbiculare*, Mgh., S. *paradoxum*, Meyen, S. *tetracerum*, Ralfs, S. *tricorne*, Mgh.

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* Numerous interesting *Diatomaceæ* were also met with. One of them especially attracted notice, viz. *Surirella Campylodiscus*: a few examples of which were found near Ballater at 1600 feet. I have seen it also from the Highlands of Banffshire, where it was discovered by Mr. P. Grant. Kutzing quotes it (Diatomeen, p. 60) as found in fresh water in Mexico. The *Algæ* of other families will be noticed in a subsequent communication.

To this genus may probably be added another very fine species which Mr. Ralfs calls S. *bacillare*.

Tetmemorus *Brebissonii*, Ralfs, T. *granulatus*, Ralfs.

Xanthidium *aculeatum*, Ehr., X. *fasciculatum*, Ehr., X. *furcatum*, Ehr., X. *polygonum*, Hass.

II. Hill of Fare, fourteen miles west from Aberdeen, at 450 feet, found by Mr. P. Grant.

Closterium *Dianæ*, C. *Digitus*, C. *lineatum*, C. *moniliferum*.

Cosmarium *Botrytis*, C. *crenatum*, C. *quadratum*, C. *margaritiferum*.

Euastrum *affine*, E. *Didelta*, E. *gemmatum*, E. *oblongum*, E. *Pelta*, E. *rostratum*.

Micrasterias *rotata*.

Staurastrum *mucronatum*, S. *orbiculare*, S. *tetracerum*.

Tetmemorus *Brebissonii*.

III. Pannanich Cliffs, forty miles inland, 1000 to 1100 feet.

Closterium *Digitus*, C. *margaritaceum*, C. *Trabecula*.

Cosmarium *quadratum*, C. *margaritiferum*.

Cylindrocystis *Brebissonii*.

Staurastrum *muricatum*, S. *tricorne*.

Tetmemorus *Brebissonii*, T. *granulatus*.

IV. Near Linn of Dee, sixty-seven miles inland, at 1190 feet.

Closterium *Dianæ*, C. *Trabecula*, C. *turgidum*.

Cosmarium *margaritiferum*, C. *ornatum*.

Tetmemorus *Brebissonii*.

V. Glen Lui, about seventy miles inland, at 1300 feet.

Didymoprium *Borreri*.

Euastrum *affine*, E. *Didelta*, E. *Pelta*.

Staurastrum *bifidum*, S. *margaritaceum*, S. *mucronatum*, S. *tricorne*.

VI. Hill of Craigendarroch, forty-two miles inland, at 1340 feet.

Closterium *Digitus*, C. *striolatum*, C. *Trabecula*.

Cosmarium *crenatum*, C. *Cucurbita*, C. *margaritiferum*, C. *quadratum*, C. *conatum*.
Euastrum *Didelta*.
Staurastrum *bifidum*, S. *Incus*, S. *margaritaceum*.
Xanthidium *fasciculatum*.

VII. Face of the Khoil, forty-three miles inland, at 1600 feet.
Closterium *Dianæ*, C. *striolatum*, C. *Trabecula*.
Cosmarium *Botrytis*, C. *Cucumis*, C. *margaritiferum*, C. *orbiculatum*, C. *ovale*, C. *quadratum*.
Euastrum *binale*, E. *Didelta*.
Scenedesmus *triseriatus*.
Tetmemorus *granulatus*.
Xanthidium *fasciculatum*, X. *furcatum*.

VIII. Glen Derry, about seventy miles inland, at 1600 feet.
Closterium *acerosum*, C. *Cornu*, C. *Dianæ*, C. *Digitus*, C. *Lunula*, C. *moniliferum*.
Cosmarium *Cucumis*, C. *margaritiferum*, C. *ornatum*.
Cylindrocystis *Brebissonii*.
Didymoprium *Borreri*.
Euastrum *affine*, E. *binale*, E. *Didelta*, E. *gemmatum*, E. *oblongum*.
Staurastrum *convergens*, S. *tricorne*.
Tetmemorus *granulatus*.

IX. Little Craigendall, Braemar, at 2450 feet.
Closterium *Dianæ*, C. *Digitus*.
Cosmarium *Cucurbita*, C. *margaritiferum*, C. *ornatum*, C. *quadratum*.
Euastrum *affine*.
Pediastrum *Boryanum*.
Staurastrum *margaritaceum*.
Tetmemorus *granulatus*.

X. Lochnagar, at 2600 feet.
Closterium *Digitus*, C. *Lunula*, C. *Trabecula*.

Cosmarium *margaritiferum.*
Cylindrocystis *Brebissonii.*
Euastrum *Didelta.*
Staurastrum *convergens.*
Tetmemorus *Brebissonii.*

XI. Loch Aitchichan, east side of Ben Muich Dhui, at 2800 feet.
Cosmarium *margaritiferum*, C. *ornatum.*
Cylindrocystis *Brebissonii.*
Euastrum *affine.*
Tetmemorus *Brebissonii.*

(These five species were found in a black mud beneath snow, which also contained a profusion of *Diatomaceæ.*)

XII. In a marsh supplied by melting snow, above Loch Aitchichan, at 3480 feet.
Closterium *Digitus.*
Cosmarium *Cucurbita.*
Euastrum *affine*, E. *Pelta.*
Micrasterias *rotata.*
Staurastrum *orbiculare.*
Tetmemorus *Brebissonii.*

XIII. Lochnagar, at 3600 feet.
Closterium *Lunula*, C. *Digitus.*
Cosmarium *Cucurbita*, C. *margaritiferum*, C. *quadratum.*
Euastrum *Didelta.*
Micrasterias *rotata.*
Tetmemorus *Brebissonii.*

XIV. Lochnagar, at 3700 feet, in a spring well.
Closterium *Dianæ.*
Cylindrocystis *Brebissonii.*
Staurastrum *convergens.*

(In the same water were found *Synura Uvella*, *Enchelys infuscata*? *Diglena*? and *Trichoda pura*, in great numbers and quite active, some of them are common at Aberdeen near the sea-level.)

The following table indicates the number of British species in each genus, those found at Aberdeen, those at 1000 feet, and those at lower than 2000 feet, &c., &c.

	No. of species Britain	No. of species Aberdeen	No. of species 1000 feet	No. of species 2000 feet	No. of species 3000 feet
Closterium	14	14	9	4	3
Cosmarium	10	8	9	4	3
Cylindrocystis	1	1	1	1	1
Desmidium	2	2	0	0	0
Didymoprium	2	2	1	0	0
Euastrum	10	10	5	2	3
Glæoprium	2	2	0	0	0
Holocystis	1	1	0	0	0
Micrasterias	2	2	0	0	1
Pediastrum	7	4	0	1	0
Scenedesmus	5	5	1	0	0
Staurastrum	16	11	7	2	2
Tetmemorus	2	2	2	2	2
Xanthidium	4	4	2	0	0
	78	68	37	16	15

The large proportion of the British species occurring at Aberdeen is worthy of remark; especially as most of them reach also the southern extremity of our island. This may be owing to the element in which they live, being little liable to rapid changes of temperature: even were it the converse, probably their low vitality (if the expression may be allowed) might render them less liable to be affected by such changes. The proportion occurring at altitudes above 1000 feet, I believe to be in reality much greater than the table indicates; and future observations will no doubt add to the number of species. The localities visited were very unfavourable to the presence of *Desmidieæ:* clear springs with gravel, and the streams and streamlets flowing from them being less suitable habitations than stagnant pools, and slow streams abounding in mud and peat. This idea seems to receive support from the observations made by Mr. P. Grant in another part of the country, and which are added to these remarks. At the higher altitudes, the individuals of certain species seemed to be less numerous than in the lower grounds: this was especially true of *Pediastrum Boryanum:* on the other hand, *Micrasterias rotata* was very abundant, and the individuals equally large as those found near the sea level. Several were observed at high elevations which have not hitherto been seen lower, for instance *Staurastrum Incus,* and *S. convergens, Cosmarium Cucurbita,* and *C. orbiculatum.* As these, however, occur also in the southern parts of Britain, they may yet be detected at Aberdeen.

I. In a marsh in the upper part of Caulochan Glen, at 2742 feet, the following were found:
Closterium *Dianæ.*
Cosmarium *margaritiferum,* C. *ornatum.*
Glæoprium *mucosum.*
Staurastrum *orbiculare,* S. *tricorne.*

To Mr. P. Grant I am indebted for the following lists of species, collected in Banffshire, and on its borders.

II. Near Loch Builg, 1600 feet more or less.
Closterium *Ehrenbergii,* C. *moniliferum,* C. *striolatum.*
Cosmarium *Botrytis,* C. *crenatum.*
Euastrum *affine,* E. *gemmatum.*
Scenedesmus *quadriseriatus.*
Staurastrum *orbiculare.*
Tetmemorus *granulatus.*

III. Glen Livat, altitude unknown.
Closterium *acerosum,* C. *Digitus,* C. *Lunula,* C. *lineatum.*
Cosmarium *Botrytis,* C. *margaritiferum.*
Scenedesmus *quadriseriatus.*
Tetmemorus *granulatus.*
Xanthidium *furcatum.*

IV. Source of the Alyniach, at 3000 feet, more or less.
Closterium *digitus,* C. *Dianæ,* C. *Lunula,* C. *moniliferum.*
Cosmarium *Botrytis,* C. *Cucurbita,* C. *quadratum.*
Cylindrocystis *Brebissonii.*
Desmidium *Swartzii.*
Didymoprium *Borreri.*
Euastrum *Didelta,* E. *gemmatum,* E. *affine,* E. *oblongum,*
  E. *Pelta,* E. *rostratum,* E. *spinosum,* E. *verrucosum.*
Micrasterias *rotata.*
Pediastrum *angulosum,* P. *constrictum.*

Scenedesmus *quadriseriatus.*
Staurastrum *paradoxum.*
Tetmemorus *Brebissonii.*

(*To be continued*).

BOTANICAL INFORMATION.

DEATH OF M. BENJAMIN DELESSERT.

We have the melancholy task of announcing the recent death, in Paris, of the great Mecænas of Natural History, and especially of Botany, M. LE BARON BENJAMIN DELESSERT, which took place at his hotel in that city on Monday the 8th of this month. His loss will be severely felt throughout the scientific world; while to his own family and friends, to whom he was endeared by the most amiable manners and the most generous disposition, it will be irreparable. It is some consolation to know that he has made provision for the maintenance of his vast Herbarium and Library, so that they will be still available, as heretofore, to the public good.

Catalogue of MR. GEYER'S *Collection of Plants gathered in the* UPPER MISSOURI, *the* OREGON TERRITORY, *and the intervening portion of the* ROCKY MOUNTAINS; *by* W. J. H.

(*Continued from p.* 79).

LEGUMINOSÆ, *Juss.*

1. Vicia *Americana*, Muhl.—Hook. Fl. Bor. Am. 1. p. 157. Torr. et Gr. Am. 1. p. 269.—var. foliis latioribus magis obtusis.

HAB. Thickets and rich grassy vallies of Kanzas River. (n. 75).—*Var.* Valley of the Kooskooskee. (n. 338).—A very variable species in the form and apex of the leaflets: I fear the V. *Oregona* and V. *truncata* of Nuttall are mere forms of the same.

1. Lathyrus *venosus*, Muhl.—Torr. et Gr. Am. 1. p. 274. L. decaphyllus, *Hook. Fl. Bor. Am.* 1. *p.* 159. *Hook. in Bot. Mag. t.* 3133. L. Californicus, *Lindl. Bot. Reg. t.* 1144.

HAB. Elevated meadows, Cœur d'Aleine valley, near St. Josephs. (n. 624).—Much confusion still exists among the *Lathyri* of N. America. The plant here intended is clearly the L. *decaphyllus* of Hooker, and the L. *Californicus*, Lindl.

2. L. *ochroleucus*, Hook. Fl. Bor. Am. 1. p. 159. Torr. et Gr. Am. 1. p. 275. L. pisiformis, *Richards. in App. Frankl. Journ. ed.* 2. *p.* 28.

HAB. Along the foot of the wooded mountains, in high cold plains of the Nez Percez Indians, in fertile meadows. Corolla ochroleucous. June. (n. 412).

3. L. *ornatus*, Nutt.—Torr. et Gr. Am. 1. p. 277.

HAB. Scattered almost over the whole of the Missouri territory, along the banks of rivers. It forms dense groups by itself, in the high fertile Prairies of Kanzas, near Platte River. Flowers very large, fragrant, white, rose, also pink or crimson. The Pawnees collect the young legumes for food. (n. 255).

4. L. *polymorphus*, Nutt.—DC. Prodr. 2. p. 371. Torr. et Gr. Am. 1. p. 277. L. decaphyllus, *Ph.* (*not Hook., according to Torr. and Gr.*) Vicia stipulacea, *Ph.* (*according to Torr. and Gr.*)

HAB. High dry openings in the woody mountains of Cœur d'Aleine River. Flowers varying from pale rose to purplish. (n. 312).—Three varieties are included in Mr. Geyer's specimens under this: 1. With leaves broadly elliptical. 2. Leaves narrow elliptical. 3. Leaves lanceolate, linear or linear-filiform.

1. Glycyrrhiza *lepidota*, Nutt.—Sims, Bot. Mag. t. 2150.

Hook. Fl. Bor. Am. 1. p. 138. Torr. et Gr. Am. 1. p. 298.

Hab. Gravelly banks of rivers, Missouri and Oregon Territory. July, August. (n. 65).

1. Psoralea *lanceolata*, Ph.—Hook. Fl. Bor. Am. 1. p. 135. t. 51. Torr. et Gr. Am. 1. p. 299. P. elliptica, Ph.—P. arenaria, Nutt. DC. — β. magis fruticosa, ramosaque, foliis minoribus.

Hab. Covering, together with *Rumex venosus*, the drift-sand hills of Lower Platte, and binding the sand by its long creeping roots. June. Corolla bluish-white. (n. 170).—β. Drift-sand plains at the mouth of the Walla Walla River. Roots very long; caudex woody; forming large prostrate bushes, binding with their branches as well as with their roots, the loose sand together. Corolla light blue. June, July. (n. 653).

2. P. *floribunda*, Nutt.—Torr. et Gr. Am. 1. p. 300.

Hab. Fertile elevated plains of the Lower Platte, with P. *esculenta* and "*Coreopsis palmata.*" July. Flowers deep blue. (n. 67).

3. P. *esculenta*, Ph. Am. 2. p. 475. t. 22. Torr. et Gr. Am. 1. p. 202.

Hab. Fertile plains of the whole of Missouri and Dacotah territories, growing with P. *floribunda*. July. Flowers pale blue. This is the Prairie-turnep of travellers; the bread of the Sioux Indians. (n. 58).

4. P. *hypogæa*, Nutt.—Torr. et Gr. Am. 1. p. 302.

Hab. On the "Black Hills," near the passage of "Horse River," not far from the Platte. "Different from the P. *esculenta*, which ceases to the westward." Corolla light blue. (n. 269).

1. Trifolium *eriocephalum*, Nutt.—Torr. et Gr. Am. 1. p. 313.

Hab. High swampy meadows in the Nez Percez mountains. (n. 379).—A most distinct and fine species.

2. T. *altissimum*, Hook. Fl. Bor. Am. 1. p. 130. t. 48. Torr. et Gr. Am. 1. p. 313.

Hab. Excavated water-courses of Trappe-rock: Tableaux Highlands of Spokan, and Cœur d'Aleine River. July. (n. 472).

3. T. *Andinum*, Nutt.—Torr. et Gr. Am. 1. p. 314.

Hab. On an isolated calcareous cliff between Sweet Water, and Big Sandy River of Upper Colorado. August. (n. 105). —A very curious and rare dwarf alpine species, only previously found by Mr. Nuttall.

4. T. *longipes*, Nutt. — Torr. et Gr. Am. 1. p. 315.—β. *latifolium*; foliis majoribus fere late ovatis subrhomboidisve.

Hab. Stony banks of Flathead River. September. Heads of flowers white. (n. 283). β. Open Pine-woods on the undulating ridge of Cœur d'Aleine Mountains, near St. Josephs. (n. 659). Mr. Gordon finds the same species on the upper sources of the Platte River. The roots are much branched and intricated, running under the soil and sending out stolones. The first leaflets of these stolones in α. are small and obcordate; the rest linear-oblong or lanceolate, acute at both ends:—in β. the leaves are very broad, and the plant assumes much the character of T. *repens*: but the calyces are always hairy, and the segments much longer and narrower.

5. T. *cyathiferum*, Lindl.—Hook. Fl. Bor. Am. 1. p. 133. t. 50. Torr. et Gr. Am. 1. p. 320.

Hab. Stony meadows in Pine woods and along rivulets in the high plains of Spokan and Flathead Rivers. Flowers pale red or whitish. (n. 639).

6. T. *microcephalum*, Ph. Am. 2. p. 478. Hook. Fl. Bor. Am. 1. p. 132. Torr. et Gr. Fl. 1. p. 317.—var. *bipedale*; omnibus partibus majus, involucris foliis stipulisque duplo majoribus.

Hab. Exsiccated water-courses; plains of Spokan and Flathead Rivers. Corolla lurid-white or reddish. ♂. (n. 640). —*var.* Water-courses in the sterile plains of Tshimakain, Spokan country, trailing through dense grasses. (n. 678).— The variety here noticed exactly agrees with the α, except in the larger size of all the parts.

1. Hosackia *decumbens*, Benth.—Hook. Fl. Bor. Am. 1. p. 34. Torr. et Gr. Am. 1. p. 324.

Hab. The only flowering plant seen during summer on the vast stony Table Land of the Spokan country, mostly rooting in the crevices of Trappe masses. It forms dense masses, one foot in diameter. In sandy woods it grows erect. (n. 553).

2. H.* *Purshiana*, Benth.—Hook. et Arn. Bot. of Beech. Voy. p. 137. Torr. et Gr. Am. 1. p. 327.

Hab. Gravelly banks of rivers, and water-courses in the plains and mountains of Missouri and Oregon territories. A variety, with one leaflet only, occurs in the fields and farm yards about Fort Colville. June, July. (n. 578).

1. Astragalus *Hypoglottis*, L.—Engl. Bot. t. 274. Hook. Fl. Bor. Am. 1. p. 148.—var. *robustus*; major, robustior.

Hab. Low fertile meadows, river valley of Laramie's Fork, Upper Platte. July. Corolla pale lilac (n. 127.) *Var.* High gravelly plains of Upper Platte near Laramie's Fork; seen also on the west side of the Rocky Mountains, very abundant on the Upper Missouri, Teton River. Colour pale purple (n. 126.)—The large state of this plant seems to me identical with A. *adsurgens*, and is very near the O. *onobrychoides* from Altai.

2. A. *pauciflorus*, Hook. Fl. Bor. Am. 1. p. 149. Torr. et Gr. Am. 1. p. 329.

Hab. On clay-banks in the small springy meadows in the desert of the Upper Platte River. June. (n. 3.)

3. A. *gracilis*, Nutt.—Torr. et Gr. Am. 1. p. 229.—*β. erectus*, elongatus.

Hab. Stony, arid ridges of the Upper Platte, rare. June, July, (n. 74.)—*β*. Gravelly hills, Upper Platte, with "*Polygala alba* and *Calymenia angustifolia*." This is the Liquorice-root of the Teton-Sioux Indians. June. (n. 223.)—Habit of *Psoralea* and of some *Phacæ*, especially of Ph. *elongata*, Hook. The true plant of Nuttall. Var. *β*. is a taller and stronger growing state.

4. A. *caryocarpus*, Ker, Bot. Reg. t. 176. Hook. Fl. Bor.

Am. 1. p. 150. Torr. et Gr. Am. 1. p. 331. A. succulentus, Richards. App. Frankl. ed. 2. p. 29. Lindl. Bot. Reg. 1. 1324.

Hab. Fertile plains of Kanzas River, near Vermillion River, in stony sunny situations. Corolla pale purple. Legume oval, large, fleshy. Stems prostrate. June. (n. 128.)

5. A. "*humilis*," Geyer, mst.; cano-sericeus, radice fusiformi, foliis omnibus radicalibus petiolatis pinnatis, pinnis $\frac{3}{4}$ unciam longis, obovato-ellipticis utrinque plerumque acutis, stipulis—?, scapis folio brevioribus paucifloris, legumine (unciam longo) ovato acuminato pilosulo carnoso crasso compresso ruguloso apice uncinato deflexo.

Hab. On a stony ridge in the Black Hills, (n. 125.) Upper Platte River, *Gordon.*—This appears to be a very distinct species from any hitherto described; but from the imperfect state of the specimens, I am obliged to speak with caution. One specimen is in the collection of Mr. Gordon from the Upper Platte; from the scape of which the flowers or legumes have fallen: the other is from Mr. Geyer and has a solitary legume, a good deal resembling that of A. *caryocarpus.* The great size of the leaflets of the entirely radical leaves and their silky clothing are characteristic of the species.

6. A. *glareosus,* Dougl. in Hook. Fl. Bor. Am. 1. p. 152. Torr. et Gr. Am. 1. p. 334.

Hab. On a calcareous rock, called "South Bluffs," near Horse River of the Upper Platte. June. (n. 39.)

7. A. *leucophyllus ?,* Torr. et Gr. Am. 1. p. 336.

Hab. On layers of stiff, ferruginous clay-banks on the Trappe Mountain declivities; Upper Kooskooskee. May. (n. 378.) —This plant is evidently allied to A. *Canadensis,* but has the flowers in longer spikes and nearly erect. The calyx is sprinkled with black silky hairs. Fruit subcylindrical, compressed, nearly an inch long, glabrous with a deep furrow on one side and a keel on the other suture. It seems to agree with the description of A. *leucophyllus*; a plant said to be found by Douglas in California.

8. A. *Drummondii*, Dougl. in Hook. Fl. Bor. Am. 1. p. 153. t. 57. Torr. et Gr. Am. 1. p. 337.

HAB. Fertile elevated plains of Platte River near Laramie's Fork. July. Two feet high, very bushy; corolla always white. (n. 52.)

1. Oxytropis *Lamberti*, Ph.—Nutt. Gen. Am. 2. p. 98. Hook. Fl. Bor. Am. 1. p. 147. Torr. et Gr. Am. 1. p. 339.

HAB. Elevated gravelly plains of Kanzas and Lower Platte Rivers. This species of *Astragalus* varies with all the beautiful colours exhibited in *Lathyrus*. It generally grows in company with "*Pentstemon albidus*," and "*Sida coccinea*." June. (n. 77.)

2. O. *sericea*, Nutt.—Torr. et Gr. Am. 1. p. 339.—β. foliis omnibus obovato-ellipticis.

HAB. β. On the Black Hills near Fort Laramie. Corolla of the same colour as the flowers of *Apios tuberosa*. (n. 256.)

3. O. *campestris*, DC.—Hook. Fl. Bor. Am. 1. p. 147. Torr. et Gr. Am. 1. p. 341.—β. *speciosa*, Hook. l. c.

HAB. β. On the fertile elevated plains of the Platte River, with *Psoralea esculenta* and *canescens*. Flowers yellowish-rose colour, often pure white, or having the vexillum tipped with violet. June. (n. 5.)—These are superb specimens, a foot or a foot and a half long. Spikes much elongated, especially in fruit. Leaves and calyces very silky. Mr. Gordon finds the same noble variety on the Upper Platte.

4. O. *multiceps*, Nutt.—Torr. et Gr. Am. 1. p. 341.

HAB. Stony ridges along the hills of Upper Platte, growing with *Mamillaria simplex*, very rare. July. (n. 120.)

5. O. *deflexa*, DC. Richards. App. Frankl. Journ. ed. 2. p. 28. Hook. Fl. Bor. Am. 1. p. 148. Torr. et Gr. Am. 1. p. 342.—β. *sericea*, Torr. et Gr. Am. l. c.

HAB. In a small meadow on the Upper Sweet Water River Mountains, rare. August. (n. 108).

1. Phaca *cæspitosa*, Nutt.—Hook. Fl. Bor. Am. 1. p. 143. t. 55. Torr. et Gr. Am. 1. p. 342.—β. foliis duplo triplo minoribus vix flores superantibus.

Hab. β, Stony plains, on the north and south Forks of the Platte. Corolla always white. Geyer. n. 166.—I do not see how this can be distinguished from P. *cæspitosa.* It has much smaller leaves, and shorter petioles. P. *argophylla,* on the other hand, judging by original specimens from Mr. Nuttall, has broader leaflets than P. *cæspitosa,* and is I fear a mere variety.

2. P. *sericea,* Nutt.—Torr. et Gr. Am. 1. p. 343.

Hab. Calcareous cliffs and rocky ridges, Upper Platte River, growing with " *Evolvulus argenteus.* Corolla reddish. June. (n. 161.)

3. P. *longifolia,* Nutt.—Torr. et Gr. Am. 1. p. 346.—Psoralea longifolia-, *Ph. DC.* Orobus longif. *Nutt. Gen. Am.* 2. p. 95. O.? longifol. *DC. Torr. in Ann. Lyc. N. York,* 2. p. 180.

Hab. Rare. On drift-sand of the plains of Upper Platte, growing in groups and binding the sand-hills with its long filiform roots. Corolla lurid. Legume much inflated, whitish-green, dotted with pale purple. (n. 22). A most curious and beautiful species: found also by Mr. Gordon, (in the Lower Platte Sweet Water River) who observes that the large pods are spotted like a bird's egg.

4. P. *annua* (Gey. mst.); annua simplex erecta v. ramosa prostrata canescenti-hirsuta, ramis flexuosis, foliis pinnatis, foliolis linearibus obtusis, racemis axillaribus copiosis floriferis folio brevioribus fructiferis sublongioribus, floribus parvis ochroleucis, calycibus sericeis corollæ dimidiam æquantibus, leguminibus ovatis membranaceis inflatis (¾ unc. longis) sursum curvatis acuminatis.

Hab. On firm clayey banks, among " *Artemisia cana*" in the drift-sand plains of the Upper Platte River. Grows in masses; flowers yellowish-white. June. (n. 1.)—An annual species, apparently very distinct, especially by the (comparatively) small size of its inflated membranaceous reticulated glabrous legumes. The same species, however, was gathered by Mr. Gordon in the Platte and by Mr. Douglas in 1835; but the station is not mentioned.

5. P. *pectinata*, Hook. Fl. Bor. Am. 1. p. 142. t. 54, Torr. et Gr. Am. 1. p. 347.

HAB. Gravelly bank of Laramie River. Two feet high, bushy. July. (n. 50.)

6. P. *bisulcata*, Hook. Fl. Bor. Am. 1. p. 145. Torr. et Gr. Am. 1. p. 349.

HAB. On a small fertile tract of the plains of Sweet Water River. One of the most showy of the genus, two feet high, forming large bushes. Colour varying from pure white to purple violet. July. (n. 21.)

8. P. *mollissima*, Nutt.—Torr. et Gr. Am. 1. p. 350. Astragalus Purshii, *Dougl. in Hook. Fl. Bor. Am.* 1. *p.* 336. *Torr. et Gr. Am.* 1. *p.* 336.

HAB. Sandy sterile woods of Spokan River and Kooskooskee. A prostrate plant. July. (n. 562.)—I think Nuttall is correct in referring this to *Phaca* and I willingly adopt his name.

1. Homalobus multiflorus, Nutt.—Torr. et Gr. Am. 1. p. 351. Phaca nigrescens, *Hook. Fl. Bor. Am.* 1. p. 143. Ervum multiflorum *et* Astragalus tenellus (*in part*) *Ph. (fide Torr. et Gr.)*—Homalobus dispar, *Nutt.*

HAB. On a clayey saline bank near Laramie River, Upper Platte. Common on the Upper Missouri, where it forms very large patches. Corolla white. June. (n. 56.)—This does not accord in general habit with the rest of the genus *Homalobus*; and I think it is better retained in *Phaca* till that genus shall be more thoroughly revised. Mr. Nuttall's original specimens of H. *dispar* are not different from this.

2. H. *campestris*, Nutt.—Torr. et Gr. 1. p. 351.

HAB. Found under *Artemisia cana* in the drift-sand plains, between Platte and Sweet Water Rivers. July. Corolla straw-coloured. Plant perennial. Geyer, (n. 106.)

3. H. *orthocarpus*, Nutt.—Torr. et Gr. Am. 1. p. 351.

HAB. Gravelly plains of the south Fork of Platte River, with *Lupinus pusillus* and *Polygala alba*. Flowers lurid. June. Geyer. (n. 2.)

4. H. *decumbens,* Nutt.—Torr. et Gr. Am. 1. p. 352.

HAB. Sandy slopes of the volcanic Table-lands, towards Spokan and Columbia River. Corolla pale lilac. July. (n. 475.)—H. *tenuifolius,* judging from Mr. Nuttall's specimen, is scarcely different from this.

5. H. *brachycarpus,* Nutt.—Torr. et Gr. Am. 1. p. 352.

HAB. Forming large patches, on the calcareous cliffs of the Rocky Hills of the Upper Platte near the Forks. June. (n. 171.)—This is named *Phaca simplicifolia,* Nutt., by Mr. Geyer; and it seems to accord sufficiently with the description of that species which, Drs. Torrey and Gray observe has the habit of *Homalobus.*

1. Kentrophyta *montana,* Nutt.—Torr. et Gr. Am. 1. p. 353. —β. *viridis,* K. viridis, *Nutt. Torr. et Gr. l. c.*

HAB. β. Gravelly denuded sunny places, in the drift-sand plains of Upper Platte, with "*Œnothera coronopifolia.*" Flowers bluish-white. June. (n. 123).—Very variable in the hoary or silky covering. Splendid specimens, and some quite white with silky down, were found by Mr. Gordon, in the Upper Platte. (n. 74.) Mr. Douglas also gathered this plant in 1835, but the exact locality is not recorded.

1. Hedysarum *canescens,* Nutt.—Torr. et Gr. Am. 1. p. 257.

HAB. On deep ferruginous gravel, banks of a small river near the "Red Buttes," between Platte and Sweet Water Rivers, rare, and seen nowhere else. Standard rose colour, wings bluish-lilac, June. (n. 71.)—Exactly according with Mr. Nuttall's specimens, both in leaves, flower and fruit, and with specimens found by Mr. Gordon on the Upper Platte.

1. Lupinus *laxiflorus,* Dougl. in Bot. Reg. t. 1140. Hook. Fl. Bor. Am. 1. p. 164. Torr. et Gr. Am. 1. p. 377.

HAB. Rocky ravines of the granite mountains, Sweet Water River. Suffruticose, three feet high, very bushy. Standard blue; keel purplish, white or yellow. July. (n. 29.)

2. L. *foliosus,* Nutt.—L. Arbustus, *Dougl. in Bot. Reg. t.* 1230.

Hook. Fl. Bor. Am. 1. *p.* 164. L. laxiflorus, *β.* foliosus, *Torr. et Gr.* 1. *p.* 377.

Hab. Dry open Pine woods, Nez Percez Highlands. Many stems arise from one root. Flowers blue and yellowish. June. (n. 423.)

3. L. *albicaulis*, Dougl.—Hook. Fl. Bor. Am. 1. p. 165. Torr. et Gr. 1. p. 378. L. falcifer, *Nutt. in Hook. herb.*

Hab. Loamy, calcareous, sunny places, Kooskooskee Valley. (n. 390).

4. L. *pusillus*, Ph.—Hook. Fl. Bor. Am. 1. p. 162. Torr. et Gr. 1. p. 374.

Hab. Gravelly hills on the Platte, very abundant, growing with *Gaura coccinea*, *Sida coccinea*, and *Œnothera pinnatifida*. Standard azure, wings yellow or brownish. May, June. (n. 225.)

5. L. *polyphyllus*, Lindl. Bot. Reg. t. 1097, et t. 1377. (*β.* albiflorus). Hook. Fl. Bor. Am. 1. p. 164.

Hab. High plains of the Kooskooskee River. May, June. (n. 391.)

1. Thermopsis *rhombifolia*, Nutt. (*under Thermia*), Gen. 1. p. 283. Hook. Fl. Bor. Am. 1. p. 128. t. 47. Torr. et Gr. Am. 1. p. 388. Cytisus rhombifolius, *Ph.*

Hab. Denuded places in the fertile valley of "Black's Fork," Upper Colorado. Root ligneous, strong and creeping. August. (n. 224.)

2. T. *fabacea*, DC.—Hook. Fl. Bor. Am. 1. p. 148. Torr. et Gr. Am. 1. p. 388. Sophora fabacea, *Pall. Astrag. t.* 90. *f.* 2.

Hab. Shady woods and open valleys, Nez Percez country. Root many yards long, thick, creeping, very tenacious. Legumes erect. Plant 1-3 feet high. May. (n. 365.)

3. Th. *montana*,—Nutt. Torr. et Gr. Am. 1. p. 388.

Hab. Calcareous slopes of the "Black Hills," near the Platte, rare. May, June. (n. 254.)

1. Sophora *sericea*, Nutt.—Torr. et Gr. Am. 1. p. 390.

Hab. Stony high plains and gravelly hills of Upper Platte.

Root creeping, very long and tenacious. Racemes of flowers always central and sessile. Flowers white. July (n. 258.)

Rosaceæ, *Juss.*

1. Prunus *Americana*, Marsh.—Torr. et Gr. Am. 1. p. 407. P. nigra, *Ait.—Ph.—Bot. Mag.* t. 1117. Cerasus nigra, *Hook. Fl. Bor. Am.* 1. *p.* 167.

Hab. Fertile sheltered valleys, under Pines: only seen in the Cœur d'Aleine country. Without flowers or fruit. April. (n. 496.)

1. Cerasus *mollis*, Dougl.—Hook. Fl. Bor. Am. 1. p. 169. Torr. et Gr. Am. 1. p. 410.

Hab. Slopes of the fertile grassy mountains in the Cœur d'Aleine country, between Upper Spokan and Peu d'Oreilles Rivers. Small tree, scarcely 10 feet high. April. (n. 288.)

1. Spiræa *opulifolia*, L.—Hook. Fl. Bor. Am. 1. p. 171. Torr. et Gr. Am. 1. p. 413.

Hab. Rocky shady places, valley of Kooskooskee River. Eight feet high; with arcuate branches. June. (n. 558.)

2. S. *betulæfolia*, Pall. Fl. Ross. t. 16. Hook. Fl. Bor. Am. 1. p. 172.—S. chamædrifolia, *Ph.*

Hab. Stony alpine declivities, Spokan Mountains, common: never more than 2-3½ feet high. June. (n. 657.)

3. S. *ariæfolia*, Sm. in Rees, Cycl.—Lindl. Bot. Reg. t. 1365. Hook. Fl. Bor. Am. 1. p. 173.

Hab. Fertile slopes of the mountains, Upper Oregon; very common. (n. 567.)

4. S. *dumosa*, Nutt.—S. discolor, *Ph.* (*fide Torr. et Gr.*)—S. ariæfolia, β. discolor, *Torr. et Gr. Am.* 1. *p.* 416.

Hab. Stony and sandy places of Platte River; a shrub, from 2-10 feet high: and at the mouth of Walla-Walla River, Upper Oregon. June. (n. 228.)—These are specimens of a dwarf shrub, with leaves smaller than those of a gooseberry, and the foliage and panicles very different from those of S. *ariæfolia*, with which Torrey and Gray unite it. Nuttall's, Geyer's and Gordon's specimens (the latter from the Upper Platte) are uniform.

5. S. *Menziesii,* Hook. Fl. Bor. Am. 1. p. 173. Torr. et Gr. Am. 1. p. 415.

HAB. Thickets in the plains of Spokan River Valley, along rivulets. Flowers rose-pink. Shrub 4-5 feet high. June. (n. 432.)

1. Geum *macrophyllum,* Willd.—Torr. et Gr. Am. 1. p. 421. G. strictum, β. *Hook. Fl. Bor. Am.* 1. *p.* 175.

HAB. Shady banks of streams and thickets, Upper Missouri and Oregon territories. June. (n. 251.)

1. Sieversia *triflora,* Br. — Hook. Bot. Mag. t. 2858, et Fl. Bor. Am. 1. p. 176. Geum triflorum, *Ph.—Torr. et Gr. Am.* 1. *p.* 423.

HAB. Moist grassy slopes of mountains and all over the prairies of Upper Oregon, May. (n. 296.)

1. Cercocarpus *betuloides ?* Nutt.—Torr. et Gr. Am. 1. p. 427.

HAB. A shrub of 12-15 feet, growing on a precipice of the first Trappe mountains, opposite the "Red Buttes" between Platte and Sweet Water Rivers; July. (n. 195.)—This plant is without flowers or fruit; and Mr. Geyer had marked it "*Alnus cuneata,*" Gey.; but it has the stipules of a Rosaceous plant, and exhibits all the appearance of a sterile shoot from *Cercocarpus betuloides,* Nutt. in Hook. herb.; though the leaves are larger (2 inches long) and more downy, especially beneath.

1. Purshia *tridentata,* DC.—Hook. Fl. Bor. Am. 1. p. 170. t. 58. Torr. et Gr. Am. 1. p. 428. Tigarea tridentata, *Ph. Am.* 1. *p.* 33. *t.* 15.

HAB. Stony plains of Lower Platte River, mostly on declivities. Seen again at the mouth of Walla-walla River, Upper Oregon. 3-8 feet high. June. (n. 272.)

1. Sanguisorba *annua,* Nutt.—Torr. et Gr. Am. 1. p. 429. Poterium annuum, *Nutt. in Hook. Fl. Bor. Am.* 1. *p.* 198.

HAB. Loamy, stony, sunny water-courses, Spokan highlands, with *Hosackia Purshiana.* The seedling plants have tawny-coloured leaves in the winter. July. (n. 467.)

1. Fragaria *Virginiana,* Ehrh.—Hook. Fl. Bor. Am. 1. p. 184. Torr. et Gr. Am. 1. p. 448. F. Canadensis, *Mx.*

HAB. Mountains of Spokan and Cœur d'Aleine Rivers. (n. 612.)—On these specimens a pair of small leaflets (not opposite, but alternate) resembling the bracts at the base of the pedicels, exist below the leaflets on the petiole; and Mr. Geyer observes that they are common.

1. Potentilla *Norvegica,* L.—Hook. Fl. Bor. Am. 1. p. 193. Torr. et Gr. Am. 1. p. 436.

HAB. Meadows at Black's Fork, Upper Colorado, growing with *Gentiana punctata.* August. (n. 217.)—A common, but very variable species. This specimen is tall, (a foot high), stout, with leaflets nearly 2 inches long.

2. P. *effusa,* Dougl.—Hook. Fl. Bor. Am. 1. p. 189. Torr. et Gr. Am. 1. p. 437.

HAB. On an isolated calcareous peak, near the "Wind River" Mountains, August. (n. 99.) and clayey hills about Fort Laramie, with *Guttierezia Euthemia*; rare. June, July. (n. 69.)

3. P. *gossypina,* Nutt.—P. arachnoidea, *Dougl. et Lehm. mst. ined.* — P. effusa, γ. gossypina, *Torr. et Gr. Am.* 1. *p.* 437.

HAB. Fertile meadows and plains in the valley of the Platte, near Laramie's Fork. July. (n. 119.)—Mr. Gordon's specimens of this plant, from the Upper Platte, in my possession, are named by Mr. Nuttall; and they are assuredly quite distinct from P. *effusa,* with which Messrs. Torrey and Grey unite P. *gossypina.* Mr. Douglas found it in the Walla-Walla, at the base of the Blue Mountains, and named it (and Dr. Lehmann, to whom the N. American *Potentillæ* were submitted, sanctioned the name) P. *arachnoidea*; but he remarked "the imperfect state of the specimen does not allow it to be accurately described." It was therefore omitted in the Flora Boreali-Americana.

4. P. *flabelliformis*, Nutt.—Hook. Flor. Bor. Am. 1. p. 192. t. 66. P. gracilis, β. flabelliformis, *Torr. et Gr. Am.* 1, *p.* 440.

Hab. My specimen of this has no number, nor habitat; but a note accompanies it, indicating that it was found along with P. *fissa*; viz., in the Spokan country.

5. P. *Pennsylvanica*, L.—γ. bipinnatifida, *Torr. et Gr. Am.* 1. *p.* 438. P. bipinnatifida, *Dougl. in Hook. Fl. Bor. Am.* 1. *p.* 188.

6. P. *fissa*, Nutt.—Torr. et Gr. Am. 1. p. 446.

Hab. Granite mountains, Sweet Water River; and on Spokan River, found only on rocks. (n. 637.)

1. Rubus *Nutkanus*, Moç.—Hook. Bot. Mag. t. 3453, and Fl. Bor. Am. 1. p. 183.

Hab. Deep shady fertile woods, east and west side of the Rocky Mountains, along rivulets:—abundant on the hills of the Upper Platte, June. (n. 148.)

1. Amelanchier *Canadensis*, (Mespilus, *L.*)—δ. alnifolia, *Torr. et Gr. Am.* 1. *p.* 473. Am. ovalis, β. subintegrifolia, *Hook. Fl. Bor. Am.* 1. *p.* 202. Am. florida, *Lindl. Bot. Reg. t.* 1589.

Hab. Mountains, Upper Missouri and Oregon territories; collected near the snow line of the Nez Percez country. June. (n. 489.)

Onagrarieæ, *Juss.*

1. Epilobium *angustifolium*, L.—Hook. Fl. Bor. Am. 1. p. 205. Torr. et Gr. Am. 1. p. 487.

Hab. Willow thickets, Upper Oregon and Missouri territories, above lat. 44°. (n. 229.)

2. E. *suffruticosum*, Nutt.—Torr. et Gr. Am. 1. p. 488.

Hab. Gravelly banks of Flathead River; seen nowhere else. Root creeping. (n. 113.)—One of the most remarkable and distinct of the genus, only previously found by the indefatigable Nuttall.

2. E. *tetragonum*, L.—Hook. Fl. Bor. Am. 1. p. 206. Torr. et Gr. Am. 1. p. 489. E. glandulosum, *Lehm.*

HAB. Swampy meadows; Table lands near Kooskooskee. June. (n. 518.)—As I have elsewhere remarked, I cannot distinguish E. *glandulosum* from E. *tetragonum.*

3. E. *coloratum,* Muhl.—Lehm. in Hook. Fl. Bor. Am. 1. p. 206. Torr. et Gr. Am. 1. p. 489.

HAB. Swampy meadows, Missouri and Oregon territories, above lat. 44°., growing with E. *latifolium.* July, Aug. (n. 231.)

4. E. *palustre,* L.—β. albiflorum, *Lehm.—Hook. Fl. Bor. Am.* 1. *p.* 207. *Torr. et Gr. Am.* 1. *p.* 490. E. lineare, *Muhl.*

HAB. Swampy springy meadows, Sweet Water River. July. (n. 275.)

5. E. *minutum,* Lindl.—Hook. Fl. Bor. Am. 1. p. 207. Torr. et Gr. Am. 1. p. 490.

HAB. Sandy arid slopes of the Spokan Mountains, near Tshimakaine; rare: growing with *Clarkia pulchella.* July. (n. 545.)

6. E. *paniculatum,* Nutt.—Torr. et Gr. Am. 1. p. 490.

HAB. Plains of Upper Oregon, common. July, Sept. (n. 380.)

1. Œnothera *Drummondii,* Hook. Bot. Mag. t. 3361. Torr. et Gr. Am. 1. p. 493.

HAB. On the last ranges of the Missouri limestone hills, in the valley of Upper Kanzas River, growing with *Pentstemon grandiflorus*; rare. (n. 268.)

2. Œ. *sinuata,* L.—β. minima, *Nutt.—Hook. Bot. Mag. t.* 3392. Œ. minima, *Ph.*

HAB. High arid stony plains, between Sweet Water River and Wind River Mountains; rare and scattered. (n. 647.) —A most variable species: in a young state the appearance is very different from that of the older and fully formed plant.

3. Œ. *pinnatifida,* Nutt.—Torr. et Gr. Am. 1. p. 494. Œ. albicaulis, *Ph.*

HAB. Fertile elevated plains of the Upper Platte, mostly on the heaps of earth before the burrows of the "Prairie

Marmot," growing with *Solanum triflorum:* sometimes in loose sand. June, July. Flowers white. (n. 37.)

4. Œ. *coronopifolia*, Torr. Ann. Lyc. N. York, 2. p. 201, (not of Nutt.) Torr. et Gr. Am. 1. p. 495.

Hab. Drift-sand plains, Upper Platte; and sterile stony table lands, growing with *Opuntia Missurica.* Flowers white. June, July. (n. 38.)—I fear too near the preceding.

5. Œ. *trichocalyx*, Nutt.—Torr. et Gr. Am. 1. p. 494.

Hab. On a gravelly spot near the Forks of the Platte, in the valley. Corolla white. July. (n. 175.)—Mr. Geyer alludes to this as a hybrid between Œ. *albicaulis* and Œ. *pinnatifida:* but to me it appears to be a most distinct species and quite according with the Œ. *trichocalyx*, Nutt. Mr. Gordon also finds the identical plant in the upper valley of the Platte. Root creeping.

6. Œ. *pallida*, Dougl. in Bot. Reg. t. 1142. Hook. Fl. Bor. Am. p. 210.

Hab. Sunny gravelly slopes of Upper Platte River. Flowers white, larger than those of Œ. *albicaulis*. July. (n. 176.)

7. Œ. *guttulata*, Gey. mst.; subcanescens suffruticosa cæspitosa e basi præcipue ramosa, ramis gracilibus ascendentibus nunc ramulosis, foliis approximatis oblongo-lanceolatis remote dentatis erectiusculis, floribus axillaribus solitariis majusculis sessilibus folio duplo triplove longioribus, ovario elliptico tubo calycis subduplo breviore, petalis (roseis maculosis) late obcordatis, stigmate cruciatim 4-partito.

Hab. Sunny borders of exsiccated situations, plains of Upper Platte, growing with *Lippia cuneifolia*. Rare and new? Corolla rose-colour, with variously sized purple dots. Stems prostrate or ascending. June. (n. 178.)—Mr. Gordon also finds the same species in the Upper Platte. Quite a new species, as Mr. Geyer suspected, with something the habit and foliage and flowers (in size) of Œ. *pallida*, var. β. leptophylla, *T. et Gr.* (Œ. leptophylla, *Nutt.*); but of a much more fruticose and wiry habit: the branches and calyx and leaves are generally clothed with white appressed hairs. The bark is more glabrous, and never loosens, and peels off, as in the species just mentioned. The flowers scarcely droop before expansion : the upper portion of the calyx bursts on one side all the way, and the segments cohere at the point and bend back. I cannot point out any species to which it is particularly allied.

8. Œ. *albicaulis*, Nutt.—Hook. Fl. Bor. Am. 1. p. 210. (not Ph.) Torr. et Gr. Am. 1. p. 495.

HAB. Sparingly scattered over the whole range of the deserts of Upper Missouri and Oregon territory: often 4 feet high, and very bushy. Corolla white. July. (n. 47.)

9. Œ. *triloba*, Nutt.—Sims, Bto. Mag. t. 2566. Torr. et Gr. Am. 1. p. 499.

HAB. Springy moory places on the high cold plains of the Nez Percez Indians, at Salmon river. Root fusiform, having the same taste as that of Œ. *biennis*. June. (n. 406.)

10. Œ. *cæspitosa*, Nutt.—Sims, Bot. Mag. t. 1593.

HAB. Clayey calcareous slopes of the argillaceous bituminous slate-hills of Upper Platte. Flowers large, white, turning rose-coloured. Rare on the Platte, but abundant on the Missouri, along with "*Astragalus galegoides*." (n. 160.)—The Œ. *montana* of Nuttall seems almost to unite the Œ. *marginata* of that author with Œ. *cæspitosa*.

11. Œ. *lavandulæfolia*, Torr. et Gr. Am. 1. p. 501.

HAB. Grows within a narrow limit near the junction of the north and south fork of the Platte, on decomposed calcareous rocks, with *Phaca simplicifolia*. Flowers the colour of *Carthamus tinctorius*. (n. 16.)—A very distinct and rare species; but allied, as Messrs. Torrey and Gray justly observe, to the Mexican Œ. *Hartwegi* of Benth.: they point out the distinguishing characters. The fruit exists on beautiful specimens gathered by Mr. Gordon in the Upper Platte: it is about an inch long, sessile, linear-clavate, terete, or obscurely angled, with a four-cleft summit.

12. Œ. *serrulata*, Nutt. β. Douglasii, *Torr. et Gr. et Am.* 1. *p.* 502. Œ. leucocarpa, *Lehm. in Hook. Fl. Bor. Am.* 1. *p.* 502.

Hab. Gravelly elevated plains, Upper Kanzas and Lower Platte Rivers, growing with *Psoralea esculenta* and *canescens*. June. (n. 165.)

13. Œ. *densiflora*, Lindl. Bot. Reg. t. 1593.

Hab. Stony water-courses, Spokan plains, growing with *Hosackia Purshiana*, rare. Flowers purple. June. (n. 591.) —A very peculiar plant, with deeply cleft petals and the habit of a *Lythrum*.

14. Œ. *scapoidea* (Chilismia), Nutt.—Torr. et Gr. Am. 1. p. 506.

Hab. Slopes of the calcareous argillaceous hills of the Upper Colorado. July, August. (n. 94.)—A most remarkable looking plant, extremely unlike any other *Œnothera*; found also in the Rocky Mountains by Mr. Gordon. Mr. Geyer's specimens are 8-9 inches high.

15. Œ. *contorta*, Dougl.—Hook. Fl. Bor. Am. 1. p. 214. Torr. et Gr. Am. 1. p. 511.

Hab. Growing under bushes of *Fremontia*, in the sandy saline desert of Upper Sweet Water River. July. (n. 45.)

1. Gayophytum *diffusum* (Trichomeria), Nutt.—Torr. et Gr. Am. p. 513.

Hab. Sandy pine-woods at Tshimakaine, Spokan country. July. (n. 546.)

2. G. *ramosissimum* (Trichomeria), Nutt.—Torr. et Gr. Am. 1. p. 513.—α. *strictipes*; capsulis brevioribus pedicellisque fructiferis refractis. — β. *deflexum*; ovariis canescentibus, capsulis longioribus pedicellisque fructiferis stricte erectis.

Hab. α. Scattered here and there over the whole range of drift-sand plains, at the foot of the eastern range of the Rocky Mountains. Flowers pale rose-colour. June, July. (n. 4.) Upper Platte, Mr. Gordon.—β. Stony sandy plains, Valley of Tshimakaine, abundant on the Upper Columbia. Corolla pale rose-colour or white. July. (n. 547.)—What I have here made varieties will probably constitute distinct species ; and the characters seem very constant. The two kinds are mixed in the specimens of G. *ramosissimum* sent me by Mr. Nuttall.

3. G. *racemosum* (Trichomeria) Nutt. — Torr. et Gr. Am. 1. p. 514.

Hab. Desert of the Platte.—Sent by Mr. Geyer separately, but marked as probably belonging to n. 45, *Œnothera contorta*, (equally perhaps a *Gayophytum*, if that genus is good for anything) ; but it is in reality a very different plant: found also by Mr. Douglas in 1835 in the upper branch of the Columbia.

1. Clarkia *rhomboidea*, Dougl.—Hook. Fl. Bor. Am. 1. p. 214. Lindl. Bot. Reg. t. 1981.

Hab. On dry gravelly shady slopes of the high mountain at Tshimakaine, Spokan country. July. (n. 658.)

2. Clarkia *pulchella*, Ph.—Lindl. Bot. Reg. t. 1100. Hook. Bot. Mag. t. 2918, and Fl. Bor. Am. 1. p. 214.

Hab. Barren plains of mountain slopes, Upper Oregon, towards Columbia River; very abundant. June. (n. 563.)

1. Gaura *coccinea*, Nutt.—Hook. Fl. Bor. Am. 1. p. 208. Torr. et Gr. Am. 1. p. 518.

Hab. Gravelly elevated plains of Lower Platte, growing with *Œnothera serrulata*. Flowers white, turning scarlet, fragrant at night. June. (n. 172.)

2. G. *parviflora*, Dougl.—Hook. Fl. Bor. Am. 1. p. 508. Torr. et Gr. Am. 1. p. 519. Hook. Bot. Mag. t. 3506. G. mollis, *Nutt. in Ann. Lyc. N. York*, 2. *p*. 200. (*not H. B. K.*)

Hab. Fertile meadows of Horse River, Upper Platte, near Laramie's Fork. July. (n. 55.)

1. Circæa *alpina*, L.—Hook. Fl. Bor. Am. 1. p. 215. Torr. et Gr. Am. 1. p. 527.

Hab. Moist mountain woods on the Upper Columbia River. July. (n. 430.)

HALORAGEÆ, *Br.*

1. Callitriche *autumnalis*, L. C. linearis, *Ph.* C. aquatica, γ. *Engl. Bot. t.* 722, (right-hand figure.)

HAB. Pools in low meadows along rivulets, valley of Upper Clooks or Flathead River, Upper Oregon. (n. 109.)

2. C. *terrestris*, DC.—Hook. Fl. Bor. Am. 1. p. 217. C. brevifolia, *Ph.*

HAB. Mixed with *Galium trifidum.* (n. 200.)

LOASEÆ, *Juss.*

1. Bartonia *ornata*, Nutt. Gen. Am. 1. p. 297. Mentzelia ornata, *Torr. et Gr. Am.* 1. *p.* 534. Bartonia decapetala, *Sims, Bot. Mag. t.* 1487. Bartonia lævicaulis, *Dougl. in Hook. Fl. Bor. Am.* 1. *p.* 221. *t.* 69.

HAB. Cataracts at Spokan River, abundant, and 2-3 feet high; also on sandy declivities of the mountains of the same district, and there low, and covered with sand for half its height. It is, too, sparingly scattered over the undulated Prairie region, between Spokan and Lewis Rivers, in ravines. July, Sept. (n. 451.)

The leaves of this species are very variable, more or less acuminated at the apex, and in the lobes; the young flowers have the floral leaves often densely crowded about the calyx, which afterwards become distant by the elongation of the peduncle. Douglas' description of the seeds as "winged" of the B. *lævicaulis*, in opposition to the character of "nearly without margin" of Mr. Nuttall, combined with the white flowers of B. *ornata*, represented by Dr. Sims, (from a *dried* specimen, under the name of B. *decapetala*), together with the statement of this author that the flowers open "after sunset," have led to the formation of another species, (B. *lævicaulis*), on very insufficient grounds. If the admirable description of the original B. *ornata*, given by Mr. Nuttall, be carefully perused, we shall, I think, find little or nothing at variance with our plant, which is certainly the *lævicaulis* of Douglas and Hooker. Sims never saw the plant growing, and his assertion that it blooms "after sunset" is derived from Pursh, who also never met with it in a living state, and whose conduct in regard to it is justly exposed by Mr. Nuttall, *l. c.* Mr. Nuttall expressly says that the flowers expand towards sunset, and that they are "yellowish-white:" Mr. Geyer indeed observes "that they open during sunny hours, and are of a lurid golden yellow." These are the only discrepancies, if such they can be called; and I think there cannot be a doubt that B. *lævicaulis* must merge into B. *ornata.*

2. B. *nuda,* Nutt.—Ph. Am. 1. p. 328, and 2. p. 274. Mentzelia nuda, *Torr. et Gr. Am.* 1. *p.* 534.

HAB. Sterile, sunny and stony declivities of the high plains of the Upper Platte, near Fort Laramie. Corolla stramineous. July. (n. 265.)

3. B. *pumila,* Nutt.—Torr. et Gr. Am. 1. p. 535.

HAB. On decomposed bituminous slate rocks and calcareous clay-slates of the Upper Series of the chalk formation; growing with *Stanleya viridiflora.* Corolla bright yellow. July, August. (n. 95.)—A very distinct species, with, however, much the habit of the Chilian B. *albescens,* Gill. in Hook. Misc. 3. p. 327.

4. B. *albicaulis,* Hook. Bor. Am. 1. p. 222. Mentzelia albicaulis, *Dougl.—Torr. et Gr. Am.* 1. *p.* 534. Trachyphytum albicaulis, *Nutt. mst.* Acrolasia bartonoides, *Presl. Reliq. Hænk. v.* 2. *p.* 39. *t.* 55.

HAB. Precipices of the high calcareous cliffs at Ham's Fork of the Upper Colorado, rare. Flowers bright yellow. (n. 368.)—Messrs. Torrey and Gray refer to this species the *Trachyphytum gracile* of Nuttall; but my specimen from that gentleman has a very different habit, with narrow and deeply pinnatifid leaves. The foliage, however, it must be confessed, is very variable in the *Bartonias.* It has elsewhere been observed (Bot. Miscellany, v. 3. p. 327), that there is probably an error of Presl in attributing his *Acrolasia bartonoides* to Chili.

5. B. *micrantha,* Hook. et Arn. in Bot. Beech. Voy. p. 343. t. 85.

HAB. In accumulated vegetable soil on the vast amygdaloid Trappe masses about Kooskooskee River, very common. June. (n. 663.)—This exactly accords with an original Californian plant.

GROSSULARIEÆ, *DC.*

1. Ribes *oxyacanthoides?* L.—Hook. Fl. Bor. Am. 1. p. 230. Torr. et Gr. Am. 1. p. 546.

HAB. Meadows in the narrow valley of the Upper Sweet Water River, forming dense thickets. Berries of an agreeable flavour, 2-6 feet high. July. (n. 135.)—I name this doubtfully, as there is no flower and imperfect fruit.

2. R. *lacustre,* Poir.—Hook. Fl. Bor. Am. 1. p. 232. Torr. et Gr. Am. 1. p. 548.

HAB. Shady rivulets overhanging cascades in the Spokan mountains at Tshimakaine, rare: branches long and slender, berries small. Shrub 4-5 feet high. (n. 426.)

3. R. *viscosissimum,* Ph.—Hook. Fl. Bor. Am. 1. p. 234. t. 76. Torr. et Gr. Am. 1. p. 551.

HAB. Cœur d'Aleine mountains, at an elevation of about 2,000 feet above the level of the river, growing in groups in open places at the top of the mountain, sheltered by dense forests. April. (n. 293.)

4. R. *cereum,* Dougl.—Lindl. Bot. Reg. t. 1263. Hook. Fl. Bor. Am. 1. p. 2008, and in Bot. Mag. t. 3008. Torr. et Gr. Am. 1. p. 551. R. inebrians, *Lindl. Bot. Reg. t.* 1471.

HAB. Naked granite mountains, Upper Sweet Water River, with *Rhus trifoliata,* and under *Pinus resinosa.* July. (n. 227.)—These specimens are barren.

5. R. *triflorum,* Willd. Hort. Berol. t. 61. Hook. Fl. Bor. Am. 1. p. 230. R. rotundifolium, *Mx.* according to *Torr. et Gr. Am.* 1. *p.* 547.

HAB. Deep shady woods and rocks, in the high plains of the Cœur d'Aleines; common. Six to eight feet high. April. (n. 330.)

6. R. *Hudsonianum,* Richards.—β. Hook. Fl. Bor. Am. 1. p. 233. Torr. et Gr. Am. 1. p. 549.

HAB. β. On a rivulet in the high cold table-lands of the Nez

Percez, near Salmon River; rare. Four to six feet high. Racemes always erect (in these specimens,) long and with numerous flowers. Berries brownish-red. (n. 507.)

7. R. *divaricatum*, Dougl.—Lindl. Bot. Reg. t. 1359. Hook. Fl. Bor. Am. 1. p. 231.

Hab. Ravines and thickets, Kooskooskee valley. A robust shrub or small tree, 8-15 feet high, very thorny. Stems 2-4 inches in diameter. Berries very large, glabrous, dull-red. (n. 393.)

8. R. *aureum*, Ph.—Hook. Fl. Bor. Am. 1. p. 235. Lindl. Bot. Reg. t. 125.

Hab. Stony banks of Kooskookee River. Eight feet high. July; in fruit. (n. 394.)

PORTULACEÆ, *Juss.*

1. Lewisia *rediviva*, Ph.—Nutt. in Journ. Acad. Philad. 7. p. 32. t. 2. Hook. Fl. Bor. Am. 1. p. 228. Bot. Misc. 1. p. 344. t. 70. Bot. of Beech. Voy. suppl. p. 334. t. 36. Torr. et Gr. Am. 1. Suppl. p. 677.

Hab. Stony volcanic plains and sandy woods, Upper Oregon, abundant; and at Flathead and Spokan Rivers. The upper part of the thick branched tap-root is a receptacle of clusters of flowers; each cluster, before the flowers expand, is surrounded by a circle of linear, canaliculated and somewhat fleshy leaves, which remain five or six days, when they wither and the flowers open, but only during sunny weather. Soon the corolla withers also, the petals twist spirally and form a sort of calyptra over the fruit. Afterwards, the peduncle dries up with the persistent calyx down to the joint, when the wind carries it off, and the seeds are thus dispersed over the plains. Six weeks alone is the period of vegetation of this remarkable plant, 1st of May to the middle of June. (n. 424.)

1. Claytonia *lanceolata*, Ph. Fl. Am. 1. p. 175. t. 3. Hook. Fl. Bor. Am. 1. p. 224. Torr. et Gr. Am. 1. p. 199.

Hab. Alpine sandy pine woods, Upper Oregon. Flowers rose-coloured. (n. 630.)

2. C. *spathulata*, Dougl.—Hook. Fl. Bor. Am. 1. p. 226. t. 74. Torr. et Gr. Am. 1. p. 200. C. dichotoma, *Nutt. mst. in herb. Hook.*

Hab. Wet rocks, Upper Oregon; abundant on the rocky island at the Kettle Falls of Upper Columbia. June. (n. 648.)

3. C. *linearis*, Dougl.—Hook. Fl. Bor. Am. 1. p. 224. t. 71. Torr. et Gr. Am. 1. p. 203.—β. *minus*, gracilis, pedicellis brevioribus.

Hab. Wet clayey stony and sunny places about springs; on the declivities of Cœur d'Aleine Mountains, along the valley. May. (n. 300.)—β. Wet rocks, Upper Oregon, with the small *Fritillaria* and "*Collinsia minima.*" March, April. (n. 317.)

4. C. *alsinoides*, Sims, Bot. Mag. p. 1309. Hook. Fl. Bor. Am. 1. p. 225. Torr. et Gr. Am. 1. p. 199.

Hab. Shady springy grounds and swamps, in woods, Cœur d'Aleine Valley. April. (n. 321.)

5. C. *perfoliata*, Donn.—Sims, Bot. Mag. t. 1336. Hook. Fl. Bor. Am. p. 225. Torr. et Gr. Am. 1. p. 200.

Hab. Swamps along springs and rivulets in the thickets of Willow and "*Populus candicans;*" valley of Cœur d'Aleine River. May. On wet sunny rocks, abundant at Kettle Falls, Fort Colville, (n. 310); Upper Columbia River, with *Fritillaria*, *Platycarpum*, *Collinsia* and *Draba cuneata.* March, May; abundant. (n. 387.)

6. C. *Chamissonis*, Eschsch. in Spreng. Syst. Veget. 1. p. 790. Torr. et Gr. Am. 1. Suppl. p. 676. C. aquatica, *Nutt. Torr. et Gr. Am.* 1. *p.* 201.

Hab. Ponds in the Spokan plains at Tschimakaine. With bulbiferous stolones. Corolla white. Sept. (n. 531.)—A distinct and well marked species.

Crassulaceæ, *Juss.*

1. Sedum *stenopetalum*, Ph.—Hook. Fl. Bor. Am. 1. p. 228. Torr. et Gr. Am. 1. p. 560. Torr. in Ann. Lyc. N. York. 2. p. 205.

Hab. Moist rocks and sands, Upper Missouri and Oregon territory. June. (n. 373.)

1. S. *Douglasii,* Hook. Fl. Bor. Am. 1. p. 228. Torr. et Gr. Am. 1. p. 558.

Hab. Trappe rocks, Kooskooskee. July. (n. 504.)

Paronychieæ, *St. Hil.*

1. Paronychia *Jamesii,* Torr. et Gr. Am. 1. p. 170. P. dichotoma? *Torr. in Ann. Lyc. N. York.* 2. p. 290, (*not Nutt.*)

Hab. High stony plateaux of Upper Sweet Water River, with "*Phlox muscoides.*" July. (n. 144.)

Philadelpheæ, *DC.*

1. Philadelphus *Lewisii,* Ph. — Hook. Fl. Bor. Am. 1. p. 220. Torr. et Gr. Am. 1. p. 595.

Hab. Stony and shady ravines; mountains at Kooskooskee. Very fragrant; 8-10 feet high: branches robust and stiff. June. (n. 559.)

Saxifrageæ, *Juss.*

1. Saxifraga *integrifolia,* Hook. Fl. Bor. Am. 1. p. 249. t. 86. Torr. et Gr. Am. 1. p. 572.

Hab. Stony plains, Upper Oregon; very common. March, April. (n. 625.)

2. S. *Virginiensis,* Mx. Torr. et Gr. Am. 1. p. 571.—β. *vernalis*; minor, foliis latioribus, panicula laxa. S. vernalis, *Willd. Hort. Berol. t.* 43. *Hook. Fl. Bor. Am.* 1. *p.* 248.

Hab. Shady precipices, Trappe valleys, along the tributaries of the Kooskooskee River. May. (n. 366.)

3. S. *punctata,* L.?—Hook. Fl. Bor. Am. 1. p. 251. S. æstivalis, *Fisch. in Herb. nostr.—Torr. et Gr. Am.* 1. *p.* 567.

Hab. Shady precipices, Trappe rocks, along the tributaries of Lower Kooskooskee. May. (n. 363.)

1. Heuchera *micrantha,* Dougl. in Bot. Reg. t. 1302. Hook. Fl. Bor. Am. 1. p. 236. Torr. et Gr. Am. 1. p. 579.

Hab. Dry shady alpine situations, alpine slopes along Kooskooskee River; rare. June. (n. 566.)

2. H. *Americana*, L.—Torr. et Gr. Am. 1. p. 577.—*var.* minor.

Hab. *Var.* On the first ranges of the high Trappe-rock mountains, opposite the "Red Butter," on the Upper Platte and Sweet Water Rivers. July. (n. 118.)—This was gathered by Dr. James up the Missouri; but the species does not seem to have been found before in mountain regions.

3. H. *Richardsoni*, Br. in Richards. App. Frankl. Journ. p. 53. t. 29. Hook. Fl. Bor. Am. 1. p. 237.

Hab. Rocks and sandy stony declivities, Upper Columbia River. Mature leaves coriaceous. May. (n. 388.)

4. Mitella *trifida*, Grah.—Hook. Fl. Bor. Am. 1. p. 241. t. 82. Torr. et Gr. Am. 1. p. 587. Lithophragma nudicaule, *Nutt. mst.*

Hab. Shady alpine woods, Cœur d'Aleine Mountains, near St. Josephs. May. (n. 623.)

5. Lithophragma *parviflora*, Nutt.—Torr. et Gr. Am. 1. p. 584. Tellima parviflora, *Hook. Fl. Bor. Am.* 1. *p.* 239. *t.* 78. A.—β. micrantha, *Torr. et Gr.*—L. micrantha, *Nutt. mst. in Torr. et Gr. et in herb. nostr.*

Hab. α. and β. Open mountain slopes, rocks and stony plains, Upper Oregon. March-May. (n. 619.)

UMBELLIFERÆ, *Juss.*

1. Eryngium *articulatum*; aquaticum subelatum, caule striato superne dichotome diviso, foliis lanceolatis longe (radicalibus longissime) petiolatis cuspidato-acuminatis spinuloso-serratis penninerviis reticulatis nervis primariis parallelis, petiolis costisque latissimis articulatis radicalibus teretibus caulinis planis canaliculatisve spinuloso-ciliatis, foliis involucralibus capitula parum longioribus lanceolatis rigidis basi spinoso-pinnatifidis.

Hab. Very abundant at the stony edges of the Spokan River, and Skitsoë and Cœur d'Aleine Lakes. Flowers a true amethyst colour. Aug. Sept. (n. 583.)—A remarkable and distinct species, with tufted fibrous roots. "In April the young plants are wholly submerged, and present the appearance of some articulated *Juncus*; the leaves, or rather the petioles, being similarly terete and jointed. On emerging above the water, these petioles expand into laminæ at the top, retaining the jointed swollen character in the costa. The radical petioles are 8-10 inches long: those of the stem, in proportion as they are out of the water, become flattened and the margin spinuloso-ciliate." The nerves of the leaves branch off chiefly from the base or lower portion of the costa and run upwards, parallel, or nearly so, with the costa, and then are united by lesser reticulated ones. The stem is 1-2 or more feet high, the upper part dichotomously divided, with a solitary pedunculated head in the axil, and a pair of spreading, nearly sessile leaves at the fork: at the upper forks, deeply divided or laciniated. Heads of flowers about the size of a hasel-nut; their scales, or partial bracteas, purple, trifurcate.

2. Cicuta *virosa*, L.—Hook. Fl. Bor. Am. 1. p. 259. Torr. et Gr. Am. 1. p. 610.

HAB. Thickets, border of the Upper Clarke River, near Flathead Gate, or Porte d'Enfer. (n. 219.)

1. Edosmia *Gairdneri*, Torr. et Gr. Am. 1. p. 312. Alænia Gairdneri, *Hook. et Arn. Bot. Beech. Voy. Suppl. p.* 349. Edosmia montana, præalta et Oregana, *Nutt.* (*sec. Torr. et Gr.*)

HAB. Grassy mountain slopes and neglected fields, from Colville to Vancouver. The Nez Percez Indians collect the tuberous roots and boil them like potatos. In rich meadows they are the size of one's finger, and are very agreeable, with a cream-like flavour. (n. 576.)

1. Angelica ? (Thapsium, *Gey.*) *verticillata*, Gey. mst.; foliis radicalibus longe petiolatis biternatim divisis, petioli sultimis quinatim pinnatis, pinnulis oblongo-ovatis (uncialibus et ultra) grosse serratis, umbella subsexradiata, radio medio longiore latioreque fœmineo erecto reliquis masculinis radiatim dispositis, fructibus (immaturis) obovatis profunde sulcatis, stylopodiis magnis, stylis patenti-reflexis longitudine fructus.

HAB. Shady grassy borders of pine woods, on high plains of the Nez Percez Indians. June. (n. 414.)—Of the Genus of this I am exceedingly doubtful. The immature fruit and leaves are not unlike those of some *Angelica;* but there are no large sheathing bases to the petioles. My specimens are very imperfect: they consist of a fusiform root, clothed, especially above, with dense, coarse, long fibres, the remains of former petioles:—there is only one root leaf; the main petiole of which is about a span high, semiterete, channelled, striated, glabrous, as is the whole plant; this divides into 3 at the top, and each of those again into 3, bearing generally 5 oblong-ovate, membranous leaflets, opposite and slightly petiolate:—the extremity of a flowering branch has a whorl of about four pinnated and laciniated, sessile, small (2-3 inches long) leaves, within which is an umbel of 6 rays, the centre ray is twice as long and 4-5 times as stout as the others, each bearing an umbel of many petiolated umbellules of fertile flowers, yellowish white, the stylopodia very large, much broader than the ovary: the other 5 rays are sterile, (having no trace of pistil), and are each terminated by a compound sterile umbel, the whole forming a whorl around the central ray, whence Mr. Geyer's specific name. There is besides a separate fertile umbel, with very immature, deeply sulcated, obovate fruit. The umbels and umbellules have no involucral scales.

1. Cymopterus *glomeratus*, DC. Prodr.—Torr. et Gr. Am. 1. p. 623. Selinum acaule, *Psh.*—Thapsia glomerata, *Nutt.* —Ferula Palmella, *Hook. Fl. Bor. Am.* 1. p. 268.

Hab. Clayey hills of Upper Platte; rare. July. (n. 512.)

2. C. *montanus*, Nutt.—Torr. et Gr. Am. 1. p. 624.

Hab. Argillaceous, cretaceous and saline banks in the saline desert of Upper Platte; prostrate. Root farinaceous, eatable. June. (n. 513.)

1. Peucedanum *leiocarpum*, Nutt.—Seseli leiocarpum, *Hook. Fl. Bor. Am.* 1. *p.* 262. *t.* 93.

Hab. Stony places, valley of Kooskooskee, with species of *Eriogonum*. (n. 411.)

2. P. *ambiguum*, Nutt.—Torr. et Gr. Am. 1. p. 626.

HAB. Sandy woods and plains, Upper Columbia River: the "*Biscuit root*" of the Indians. April, May. (n. 458.)

3. P. *triternatum*, Nutt.—Torr. et Gr. Am. 1. p. 626. Seseli triternatum, *Ph.—DC.—Hook. Fl. Bor. Am.* 1. *p.* 204. *t.* 94. Eulophus triternatus, *Nutt.*

HAB. *a.* Grassy stony and loamy open slopes of the Cœur d'Aleine Mountains. (n. 314.)—β. *leptocarpum*, Torr. et Gr. l. c.—P. *leptocarpum*, Nutt. (probably a good species.) Grassy prairies of the Nez Percez Indians, in large wet, open, stony places. (n. 557.)—γ. *leptophyllum*; segmentorum foliis angustioribus; crevices of Trappe masses, on the slopes of the high plains of Kooskooskee River: only one specimen found in flower. July. (n. 505.)—Of the variety, *leptocarpum*, as it is here called in deference to Messrs. Torrey and Gray, Mr. Geyer observes that the tuber is subglobose, from 1-4 inches in diameter, highly farinaceous, and the principal food of the Indians, who only gather it in the flowering season. In the same prairies, Mr. Geyer remarks, the Gamass bulbs attain the unusual size of 3-3½ inches in diameter.

4. P. (Ferula, *Gey.*) *farinosum*, Gey. mst.; humile glabrum glaucum tubere globoso farinaceo, foliis bi-triternatim divisis, segmentis (uncialibus) linearibus obtusis basi attenuatis, petiolis basi membranaceo-dilatatis caulem superantibus, umbellæ radiis valde inæqualibus, involucelli squamis setaceis, floribus albis, fructibus immaturis exacte ovatis, calycis dentibus obsoletis.

HAB. On an isolated rock in the Cœur d'Aleine Mountains, on wet clay, with *Sedum stenopetalon* and *Platyspermum*. April. (n. 325.)—A small, but apparently a very distinct species, though without mature fruit it is impossible to frame a good character: it is leafy from the base. The heads of flowers are less compact, more umbellate than is usual in this genus.

5. P. (Ferula, *Gey.*) *tenuissimum*, Gey. mst.; humile gla-

brum, tubere oblongo, foliis gracillimis ternatim divisis, segmentis simplicibus vel trifidis lineari-angustissimis acuminatis, petiolis folio longioribus basi longe membranaceis, umbellæ radiis inæqualibus, involucelli squamis setaceis, floribus capitatis albis, fructibus valde immaturis oblongis.

Hab. In wet swampy small prairies (high cold region), surrounded by lofty mountains, Cœur d'Aleine country, growing with n. 305. May. (n. 302.) — About 8-10 inches high, remarkably slender, leafy from the base. The sheaths very long, peculiarly thin and membranous. The peduncles long and slender, exceeding the leaves in length; the rays much elongated as the inflorescence advances.

6. P. *lævigatum*, Nutt.—Torr. et Gr. Am. 1. p. 627.

Hab. Wet spongy stony and somewhat shady places, slopes of Cœur d'Aleine Mountains, thousands growing densely together; biennial. (n. 298.)—Flowers deep yellow.

7. P. *fœniculaceum*, Nutt. — Torr. et Gr. Am. 1. p. 627. Ferula fœniculacea, *Nutt. Hook.*

Hab. High fertile plains of Lower Platte and Kanzas Rivers, with *Hymenopappus corymbosus*. May. (n. 2437.)—*var.* β. *Torr. et Gr. l. c.* Clayey banks in the desert of Upper Colorado, with *Calochortus luteus*. (n. 191.)

1. P. *macrocarpum*, Nutt.—Torr. et Gr. Am. 1. p. 628.

Hab. Clayey stony water-courses on the high plains of the Cœur d'Aleine, Spokan and Nez Percez. Quite prostrate. Flowers chalky white; root somewhat fusiform, throwing up many stems. June. (n. 301.)

1. Leptotænia *dissecta*, Nutt.—Torr. et Gr. Am. 1. p. 630. —β. *foliosum*; segmentis angustioribus.

Hab. Fertile slopes of the mountains, Nez Percez, near the snow-line. Three to eight feet high. June. (n. 517.)

2. L. *multifida*, Nutt.—Torr. et Gr. Am. 1. p. 630.

Hab. On Trappe rocks, growing with *Berberis Aquifolium* in the Upper Oregon. Peduncle of the umbel often 2 feet long; flowers brownish-red (when male, according to my specimens), or yellow (when female.) Leaves very large, 3 times triternate, and then very compound. The young sprouts have a pleasant taste, and are collected by the Indians as soon as they appear.

1. Heracleum *lanatum*, Mx.—Hook. Fl. Bor. Am. 1. p. 269. Torr. et Gr. Am. 1. p. 632.

Hab. Shady places along the banks of rivulets, hills of the Platte River. June, July. (n. 78.)

1. Osmorrhiza *brevistylis*, DC.—Torr. et Gr. Am. 1. p. 638. Hook. Fl. Bor. Am. 1. p. 271. t. 96. Urospermum Claytoni, *Nutt.*

Hab. Shady plains, thickets of the Kooskooskee valley. June. (n. 367.)

1. Glycosma *occidentalis*, Nutt.—Torr. et Gr. Am. 1. p. 639.

Hab. Moist rocky woods, mountain-slopes towards Cœur d'Aleine River valley: possessing the strong odour of Fennel. April. (n. 610.)

1. Musenium *divaricatum*, Nutt.—Torr. et Gr. Am. 1. p. 642. Seseli divaricatum, *Ph.—Sims, Bot. Mag. t.* 1742.

Hab. Clayey saline water-courses of the hills of Platte, near the junction of the two Forks. Very common on the Missouri. July. (n. 129.)

2. M. *tenuifolium*, Nutt.—Torr. et Gr. Am. 1. p. 220. 642

Hab. Stony saline plains, Upper Platte. Has a very long vertical and thick root. June. (n. 220.)

Corneæ, *DC.*

1. Cornus *sericea*, L.—L'Hérit. Corn. p. 5. t. 2. Hook. Fl. Bor. Am. 1. p. 276. Torr. et Gr. Am. 1. p. 652.

Hab. With the willows of the Upper Platte and Oregon Territory; growing to the height of 15-20 feet. Always shrubby and with many slender stems. "*Bois rouge*" of the Voyageurs. The Indians of the Oregon make their salmon nets from the young shoots. The Teton Sioux Indians of Upper Platte smoke the inner bark of it for tobacco. (n. 194.)—This is not the larger-leaved variety, called C. *occidentalis* by Torrey and Gray.

LORANTHACEÆ, *Juss.*

1. Arceuthobium *Oxycedri*, Bieb.—Hook. Fl. Bor. Am. 1. p. 278. t. 99. Torr. et Gr. Am. 1. p. 655.

HAB. Parasitic on *Pinus ponderosa*, (only.) It often destroys growing trees of two or three years' growth, if they are in any other way previously injured. Large trees are sometimes covered with it and stunted in their growth. The small Pine squirrel feeds on it. August. (n. 577.)

CAPRIFOLIACEÆ, *Juss.*

1. Symphoricarpus *occidentalis*, Br. in Richards. App. Frankl. Journ. ed. 2. p. 6. Hook. Fl. Bor. Am. 1. p. 285.

HAB. Thickets, Oregon and Missouri territories. July. (n. 631.)

1. Lonicera *involucrata*, Banks.—Lindl. Bot. Reg. t. 1179. Hook. Fl. Bor. Am. 1. p. 284. Torr. et Gr. Am. 2. p. 9.

HAB. Dense shady woods at "Black's Fork," Upper Colorado, under *Populus candicans*: 6-10 feet high. (n. 85.)

2. L. *cærulea*, Muhl.—Hook. Fl. Bor. Am. 1. p. 283. Torr. et Gr. Am. 2. p. 9.

HAB. High cold northerly declivities of the Cœur d'Aleine Mountains, with *Myginda myrtifolia*. A small very branching shrub, about 3 feet high. May. (n. 304.)—This is the most western station yet detected for it.

RUBIACEÆ, *Juss.*

1. Galium *trifidum*, L.—Torr. et Gr. Am. 2. p. 22. G. Claytoni, *Mx.—Hook. Fl. Bor. Am.* 1. *p.* 988.

HAB. Springy swampy meadows, north of lat. 44°.: often in water, and not unfrequently growing with *Mimulus guttatus* and *Poa aquatica*. July. (n. 200.)—The specimens are small, but I think clearly belong to this species.

2. G. *boreale*, L.—Hook. Fl. Bor. Am. 1. p. 289. Torr. et Gr. Am. 2. p. 25. G. septentrionale, *Rœm. et Sch.*

HAB. Stony places and high prairies throughout Missouri territory and Upper Oregon. July. (n. 149.)

VALERIANEÆ.

1. Valeriana *sylvatica*, Banks.—Hook. Fl. Bor. Am. 1. p. 291. Torr. et Gr. 2. p. 47.

HAB. High cold wet prairies, within the Cœur d'Aleine Mountains. Root somewhat creeping, aromatic. May. (n. 308.)

1. V. *edulis*, Nutt.—Torr. et Gr. Am. 2. p. 48. Patrinia ceratophylla, *Hook. Fl. Bor. Am.* 1. *p.* 290.

HAB. Wet meadows, high plains of Upper Oregon, as far east as the Bear River. Leaves variable, very succulent, glaucous. Root thick, a good deal resembling that of a Parsnep. When baked, like Gamass, it is an agreeable food to the Indians, but very disgusting to white people, having the nauseous odour of chewed tobacco. Hence it is called "Racemo de tabao" by the trappers. May. (n. 337.)

1. Plectritis *congesta*, DC.—Hook. Fl. Bor. Am. 1. p. 291. Lindl. Bot. Reg. t. 1095.

HAB. Sunny declivities of stony mountains, Upper Oregon; common. April, May. (n. 627.)

COMPOSITÆ, *Juss.*

Trib. VERNONIACEÆ.

(Two plants are in the collection (nos. 138 and 184) marked by Mr. Geyer as "Vernoniæ;" but we have mislaid our specimens, and cannot name them in this place: we trust to do so in the Supplement, together with two or three others which we already find have escaped us in their proper place.)

Trib. EUPATORIACEÆ, *Less.*

1. Brickelia *grandiflora*, Nutt.—Torr. et Gr. Am. 2. p. 80. Eupatorium grandiflorum, *Hook. Fl. Bor. Am.* 2. *p.* 26.

HAB. Sunny gravelly places, banks of Spokan River, near the Great Falls, growing with *Bartonia ornata.* It possesses an aromatic odour, resembling that of *Pycnanthemum montanum.* (n. 452.)

2. Brickelia *oblongifolia*, Nutt.—Torr. et Gr. Am. 2. p. 80.

HAB. Sunny gravelly places, banks of Spokan River, with *Brickelia grandiflora*. July. (n. 453.)

1. Adenocaulon *bicolor,* Hook. Bot. Misc. 1. p. 19. t. 15. Fl. Bor. Am. 1. p. 308. Torr. et Gr. Am. 2. p. 94.

HAB. Deep shady fertile mountain slopes, Spokan country. August. (n. 523.)

Trib. ASTEROIDEÆ, *Less.*

1. Dieteria *coronopifolia,* Nutt.—Torr. et Gr. Am. 2. p. 101. Chrysopsis (Pappochroma) *coronopifolia,* Nutt. in Journ. Acad. Philad.

HAB. Amongst "*Stipa avènacea*" and *Junceæ,* sandy valley of Upper Platte. Rays purplish azure; disc golden yellow. July. (n. 185.)—Mr. Gordon found this plant in the same locality and extending to the Black-snake Hills.

2. Dieteria *divaricata,* Nutt.—Torr. et Gr. Am. 2. p. 100.

HAB. Barren plains and pine-woods, Upper Oregon, very abundant, mostly with "*Calochortus macrocarpus* and *Cantua coccinea.*" Biennial. July-October. (n. 586.)—Very variable in size and ramification.

1. Aster *conspicuus,* Lindl.—Hook. Fl. Bor. Am. 2. p. 7. Torr. et Gr. Am. 2. p. 108.

HAB. Borders of pine-woods, Cœur d'Aleine River and at Fort Colville. July. (n. 447.)

2. A. *lævis,* L.—Torr. et Gr. Am. 2. p. 116.

HAB. Meadows, Spokan and Columbia river valleys. Aug. (n. 638.)

3. A. *laxifolius,* Nees.—Hook. Fl. Bor. Am. 2. p. 10. Torr. et Gr. Am. 2. p. 138.

HAB. Willow thickets, Upper Oregon. July-October. (n. 633);—and saline clayey places, Upper Sweet Water River, with *Chenopodium subspicatum.* July. (n. 201.)

4. A. *modestus,* Lindl. in Hook. Fl. Bor. Am. 2. p. 8. Torr. et Gr. Am. 1. p. 145.

HAB. Rare about springy groves in the plains of Upper Columbia. July. (n. 587.)

5. Aster *Xylorhiza,* Torr. et Gr. Am. 2. p. 158. Xylorhiza

villosa, *Nutt. Trans. Am. Phil. Soc.* (*N. Ser.*) 7. *p.* 298.

HAB. Saline clayey water-courses in the argillaceous hills between Platte and Sweet Water Rivers. Many stems spring from the same root. Rays whitish. July. (n. 115.)

1. Erigeron *compositus*, Ph.—Hook. Fl. Bor. Am. 2. p. 17. and in Linn. Trans. 14. p. 374. t. 13. (*var.* smaller.) Torr. et Gr. Am. 2. p. 168.—β. *major*.

HAB. About cataracts of Clarke's River and the adjacent gravelly pine-woods or plains. June. (n. 197, in part.) β. Sandy plains and crevices of rocks, cataracts of Flathead River. (n. 350.) In both vars. the rays are white, tinged with rose.

2. E. *pedatus*, Nutt.—Torr. et Gr. Am. 2. p. 18.

HAB. With E. *compositus*. (n. 197.)

3. E. *acris*, L.—var. *glabratus*.—E. glabratus, *Hoppe.—Hook. Fl. Bor. Am.* 2. *Torr. et Gr. Am.* 2. *p.* 18. *p.* 169.

HAB. Springy sunny meadows, between Platte and Sweet Water Rivers; rare. July. (n. 27.)

4. E. *bellidiastrum*, Nutt.—Torr. et Gr. Am. 2. p. 170.

HAB. Scattered very sparingly in rich meadows of the Upper Platte valley. June. (n. 19.)

5. E. *Philadelphicus*, L.—Torr. et Gr. Am. 1. p. 171. E. purpureus, *Ait.—Hook. Fl. Bor. Am.* 2. *p.* 19.)

HAB. Fertile plains about Fort Colville, near thickets; rare. July (n. 571.)

6. E. *speciosus*, DC.—Torr. et Gr. Am. 2. p. 173. Stenactis speciosa, *Lind. Bot. Reg. t.* 1577. *Hook. Bot. Mag. t.* 3007. E. glabellus γ. mucronulatus, *Hook. Fl. Bor. Am.* 2. *p.* 19.

HAB. Fertile valleys, Upper Oregon; very common. June, July. (n. 364.)

7. E. *glabellus*, Nutt.—Hook. Bot. Mag. t. 2923, and Fl. Bor. Am. 2. p. 19. Torr. et Gr. Am. 2. p. 173.

HAB. Banks of rivulets, plains of Flathead River, Upper Clarke's. September. (n. 182,) and fertile sunny spots in the grassy valley of Lower Plate; rare. June. (n. 140.)

8. E. *concinnus*, Torr. et Gr. Am. 2. p. 174. Ditasis? concinna, *Hook. et Arn. Bot. Beech. Suppl. p.* 350.

HAB. Dry sandy rocky sunny places, Kooskooskee valley. June; rare. (n. 392.)

9. E. *pumilus*, Nutt.—Torr. et Gr. Am. 2. p. 203. L. hirsutus, *Ph.*

HAB. Denuded ferruginous loamy declivities of the Nez Percez highlands, towards Kooskooskee River. July. (n. 203.)

10. E. *divergens*, Torr, et Gr. Am. 2. p. 175. E. divaricatus, *Nutt.* (*non Mx.—fid. Torr. et Gr.*)

HAB. Only in the gravelly calcareous plains, Laramie River, Black Hills, Upper Platte. Rays white. (n. 277.)

11. E. *strigosus*, Muhl.—Hook. Fl. Bor. Am. 2. p. 18. Torr. et Gr. Am. 2. p. 176.

HAB. Stony arid plains; valley of Kooskooskee River. July. (n. 469.)

12. E. *filifolius*, Nutt.—Torr. et Gr. Am. 2. p. 177. Diplopappus filifolius, *Hook. Fl. Bor. Am.* 2. *p.* 21.

HAB. Sunny borders of pine-woods, plains of Spokan River. Rays white or rose. (n. 478.)

13. E. *cæspitosus*, Nutt.—*β*. grandiflorus, *Torr. et Gr. Am.* 2. *p.* 179. Diplopappus grandiflorus, *Hook. Fl. Bor. Am.* 2. *p.* 24.

HAB. Clayey slopes of the hills of Upper Platte with *Pentstemon undulatus*. June, July, (n. 30,) and at the foot of Trappe rocks, valley of Kooskooskee. June. (n. 502.) Rays white.

1. Townsendia *incana*, Nutt.—Torr. et Gr. Am. 2. p. 186.

HAB. Deep sandy desert between Platte and Sweet Water rivers, under *Opuntia Missourica*. July. (n. 221.)

2. T. *grandiflora*, Nutt.—Torr. et Gr. Am. 2. p. 186.

HAB. Clayey hills of Platte, and also in the adjacent sandy plains. July. (n. 49.)

1. Solidago *stricta*, Ait.—Hook. Fl. Bor. Am. 2. p. 4. Torr. et Gr. Am. 2. p. 204.

HAB. Sterile plains all over Missouri Territory, Upper Oregon, Dacotah, Iowa and Wisconsin territories, and also northern Illinois and part of Michigan. July, Aug. (n. 205.)

2. S. *Canadensis*, L.—Hook. Fl. Bor. Am. 2. p. 1. Torr. et Gr. Am. 2. p. 223.—*var.* pubescentia caulis et foliorum pauciore, capitulis minus manifeste secundis.

HAB. Poplar groves, Upper Columbia valley. August. n. 594.—This is a form between S. *Canadensis* and S. *gigantea*, β. Torr. et Gr.

1. Linosyris *lanceolata*, Torr. et Gr. Am. 2. p. 233. Chrysothamnus lanceolatus, *Nutt. Trans. Phil. Soc.* (*N. Ser.*) *7. p.* 324.

HAB. Saline stony plains, Upper Clarke's and Flathead Rivers. Sept. (209.)

2. L. *viscidiflora*, Hook. Fl. Bor. Am. 2. p. 24. (Crinitaria). Torr. et Gr. Am. 2. p. 234.—β. Torr. et Gr. l. c.

HAB. Arid stony saline slopes, near the river-valley of Black's Fork of Upper Colorado. Resinous and glutinous. Aug. (n. 102 and 206.)—β. Sterile plains of Upper Clarke's River, growing with *Artemisia tridentata.*" Sept. (n. 207.)

1. Stenotus *multicaulis*, Nutt. — Torr. et Gr. Am. 2. p. 238.

HAB. Saline clayey exsiccated water-courses in the argillaceous hills between Platte and Sweet Water rivers. July. (n. 116.)

1. Aplopappus *lanceolatus*, Torr. et Gr. Am. 2. p. 241. Donia lanceolata, *Hook. Fl. Bor. Am.* 2. *p.* 25. Homopappus (Actinaphoria) multiflorus, *Nutt.*

HAB. Stony places from Sweet Water River to Flathead River. July-September. (n. 667.)

2. A. *Nuttallii*, Torr. et Gr. Am. 2. p. 242. Eriocarpum grindelioides, *Nutt.*

HAB. Sandy stony plains at the Upper Sweet Water River, and on rocks. July. (n. 114.)

1. Pyrrocoma *carthamoides*, Hook. Fl. Bor. Am. 1. p. 306. t. 107. Torr. et Gr. Am. 2. p. 243.

HAB. Moist sterile places, high plains about Tshimakaine, Spokan country. August. (n. 588.)—These specimens differ from the original ones in the smaller capitula, which are sometimes racemose, and almost destitute of bracts.

1. Chrysopsis *villosa*, Nutt.—Torr. et Gr. Am. 2. p. 255. Amellus villosus, *Ph.* Diplopappus villosus, *Hook. Fl. Bor. Am.* 2. *p.* 22.—*β. minor;* capitulis æque cum foliis duplo minoribus.

HAB. Sandy stony banks of streams and high woods, Missouri and Oregon Territory: also in Illinois. June-August. (n. 415.)—β. On the granite masses of the Sweet Water River, only fringing the fissures. July. (n. 7.)

1. Diaperia *prolifera*, Nutt. in Trans. Am. Phil. Soc. (N. Ser.) 7. p. 337. Torr. et Gr. Am. 2. p. 264. Evax prolifera, *Nutt. in DC. Prodr.*

HAB. Sandy elevated plains of Horse River, near the Platte and Fort Laramie, covering the bare soil for some distance. June. (n. 279.)

Trib. SENECIONIDEÆ.

1. Silphium ? *læve*; glaberrimum glutinosum elatum, caule superne dense folioso striato, foliis submembranaceis radicalibus ovatis seu elliptico-ovatis subito in petiolum brevem attenuatis plurinerviis subintegerrimis nervis patentissimis approximatis, caulinis (superioribus) ovatis subobtuse acuminatis basi semiamplexicaulibus, floribus glomeratis in axillis supremis, involucri foliolis imbricatis ovato-lanceolatis membranaceis reticulato-venosis.

Balsamorhiza silphioides, *Gey. mst.*

HAB. Stony plains of Cœur d'Aleine and Spokan country, in loamy exsiccated places. Stems reclining. Leaves usually lyrato-attenuated towards the base, very stiff. Plant partaking of the resinous nature of *Silphium terebinthaceum.*

Rays saffron-yellow. May, June. (n. 395.)—This noble specimen affords but a solitary expanded flower, which, without destruction, cannot be dissected to determine the Genus. Mr. Geyer was disposed to refer it to *Espeletia*, Nutt., (*Balsamorhiza*); but it accords better in habit with *Silphium*. Mr. Geyer speaks of the leaves as "stiff;" rendered so perhaps by gummy exudation, for they are, when dry, peculiarly thin and papyraceous for a plant of this group: the plant is too everywhere glabrous. The root-leaves are about a span long, on short broad footstalks, and there is a singular contraction below the middle, whenever they become decurrent into the petiole, which did not escape the notice of Mr. Geyer. The flowers are large: the rays, in a dried state, orange-yellow: the involucres almost hemisphærical, of many imbricated, but not close-pressed membranous striated and reticulated scales.

1. Iva *axillaris*, Ph. Nutt.—Hook. Flor. Bor. Am. 1. p. 309. t. 106. Torr. et Gr. Am. 2. p. 287.

HAB. Saline clayey slopes of the high calcareous hills of Upper Platte; in such situations it is a small shrub, in saline swampy meadows and in drift sand it assumes an erect habit and is herbaceous. Fragrant. July. (n. 159.)

1. Ambrosia *artemisiæfolia*, L.—Torr. et Gr. Am. 2. p. 291. A. elatior, *L.—Hook. Fl. Bor. Am.* 1. *p.* 309.

HAB. Stony water-courses, Spokan plains; rare. July. (n. 551.)

1. Franseria *Hookeriana*, Nutt.—Torr. et Gr. Am. 2. p. 294. Ambrosia acanthocarpa, *Hook. Fl. Bor. Am.* 1. *p.* 309.

HAB. Growing with *Iva axillaris* in the drift-sand plains of Walla-walla River. August. (n. 652.)

1. Wyethia *scabra*; tota scaberrima, foliis lineari-lanceolatis sessilibus 3-nerviis mucronatis, involucri squamis lato-subulatis marginibus aculeolato-scabris.

HAB. Clayey argillaceous declivities of the high hills of Upper Colorado River. "Radical leaves about one foot long, oblong-lanceolate, exceedingly stiff and scabrous."

July. (n. 96.) — A most distinct and well-marked species; the stems and midrib of the leaves almost white. The plant is everywhere quite rough and harsh, especially the margins of the leaves and of the scales of the involucre. The leaves are 3-nerved, the nerves become confluent within the margin, so as to form two lateral nerves within the margin and parallel to it.

1. Balsamorhiza *incana*, Nutt.—Torr. et Gr. Am. 2. p. 301.

Hab. Open pine-woods on the ascent to the Nez Percez highlands.—Radical leaves a foot and a half long. Root thick; eatable. Scapes 1-2 feet high. June. (n. 419.)

2. B. *helianthoides*, Nutt.—Torr. et Gr. Am. 2. p. 302. Espeletia helianthoides, *Nutt. in Journ. Acad. Phil. 7. p. 38. t.* 4.

Hab. Stony plains and ridges, Missouri and Oregon territories. Root very long and thick; eaten by the natives. May. (n. 521.)

1. Rudbeckia *occidentalis*, Nutt.—Torr. et Gr. Am. 2. p. 313.

Hab. In a narrow rocky ravine in the extensive prairies which separate the Spokan and Cœur d'Aleine mountains; rare. July. (n. 574.)

1. Helianthus *petiolaris*, Nutt.—Torr. et Gr. Am. 2. p. 319.

Hab. Argillaceous bituminous hills of the Upper Platte and in the adjacent sand-plains. July. (n. 22.)

2. H. *rigidus*, Desf.—Torr. et Gr. Am. 2. p. 322.

Hab. Stony elevated table-land, between Platte and Sweet Water rivers, growing with *Astragalus hypoglottis*. July. (n. 34.)

3. H. *occidentalis?* Riddell.—Torr. et Gr. 2. p. 323.

Hab. On a stony ridge of the hills of Upper Platte, growing with *Eriogonum umbellatum*. July. (n. 204.)—This is a small and incomplete specimen; but seems referable to the H. *occidentalis*.

4. H. *Nuttallii*, Torr. et Gr. Am. 2. p. 325. H. Californicus, *Nutt.* (*not De Cand.*)

Hab. An annual species growing in the neglected fields of the

Flathead Indians. Six feet high. Rays long. Sept. (n. 274.)

5. H. *giganteus*, L.—Hook. Fl. Bor. Am. 1. p. 312. Torr. et Gr. Am. 2. p. 325.

Hab. Fertile valley of Sweet Water River at Rock Independance. July. (n. 66.)

6. H. *quinquenervis*; foliis ovatis acuminatis integerrimis glabris 5-nervibus caulinis oppositis in petiolum brevem attenuatis radicalibus longe petiolatis in petiolum sensim decurrentibus, pedunculis pubescentibus, squamis involucri interioribus ovato-lanceolatis exterioribus longioribus angustioribus subfoliaceis ciliatis, capitulo inter maxima, radii flosculis longis sulphureis.

Hab. Stony ridges, hills of Upper Platte, with *Balsamorhiza helianthoides*; rare. (n. 33.)—I regret to establish a new species on a solitary specimen which does not afford a spare flower for dissection; but neither in *Helianthus*, nor in any allied genus, can I find a species resembling this. The radical leaves including the petiole are above a foot long, and as well as those of the stem, have the midrib with two pairs of conspicuous nerves inserted below the middle. The flowers are more than 3 inches across.

1. Coreopsis (Calliopsis) *Atkinsoniana*, Dougl. in Lindl. Bot. Reg. t. 1376. Hook. Fl. Bor. Am. 1. p. 311. Torr. et Gr. Am. 1. p. 311.

Hab. Stony borders of Upper Columbia and Spokan rivers. July, August. (n. 644.)

1. Cosmidium *filifolium*, Torr. et Gr. Am. 2. p. 350. H. Coreopsis, *Hook. Bot. Mag. t.* 3505.

Hab. Sand hills of Lower Platte, growing with *Rumex venosus* and *Psoralea tenuiflora*. July. (n. 57.)

1. Gaillardia *aristata*, Ph.—Hook. Bot. Mag. t. 2940 and Fl. Bor. Am. 2. p. 315.

Hab. Plains of Upper Platte, in the most sterile and exposed situations, and in Dacotah, Missouri and Oregon territories, growing with "*Artemisia frigida*" and "*Mammillaria simplex*." (n. 35.)

1. Chænactis *Douglasii,* Hook. et Arn. Bot. of Beech. Voy. Suppl. p. 354. Torr. et Gr. Am. 2. p. 371. Hymenopappus Douglasii, *Hook. Fl. Bor. Am.* 1. *p.* 316. Macrocarpus Douglasii, *Nutt. in Trans. Am. Phil. Soc.* 7. *p.* 375.

HAB. Only one specimen found, growing with "*Bartonia ornata,*" at the Great Falls of Upper Spokan River. July. (n. 552.)

2. C. *achilleæfolia,* Hook. et Arn. Bot. of Beech. Voy. Suppl. p. 354. Torr. et Gr. Am. 2. p. 371. Macrocarphus achilleæfolius, *Nutt. l. c.*

HAB. Amongst *Opuntia Missourica* in the high sandy plains between Platte and Sweet Water rivers. July. (n. 142.)

1. Hymenopappus *corymbosus,* Torr. et Gr. Am. 2. p. 372.

HAB. High fertile plains of Lower Platte and Kanzas Rivers. May. (n. 246.)

2. H. *tenuifolius,* Ph.—Torr. Gr. Am. 2. p. 373.

HAB. Gravelly hills, Lower Platte, growing with *Evolvulus argenteus* and *Polygala alba.* June, July. (n. 214.)

3. H. *luteus,* Nutt.—Torr. et Gr. Am. 2. p. 373.

HAB. Amongst *Opuntia Missourica* in the great sandy plains between Platte and Sweet Water Rivers. July. (n. 141.)

1. Bahia *leucophylla,* DC.—Torr. et Gr. Am. 2. p. 375. Trichophyllum integrifolium, *Hook. Fl. Bor. Am.* 1. *p.* 316. T. multiflorum, *Nutt.*

HAB. Covering the declivities of Trappe and Basalt mountains on the Kooskooskee and Cœur d'Aleine rivers. May. (n. 561.)

2. B. *oppositifolia,* Nutt. (under *Trichophyllum*).—Torr. et Gr. Am. 2. p. 376.

HAB. Scattered in a small range of fertile plains around the granite mountains, between Platte and Sweet Water rivers. July. (n. 6.)

1. Actinella *acaulis,* Nutt.—Torr. et Gr. Am. 2. p. 382. Gaillardia acaulis, *Ph.*

HAB. Sunny cliffs of argillaceous calcareous rocks, hills of Platte, near the junction of the two forks. June, July. (n. 32.)

1. Helenium *autumnale*, L.—Hook. Bot. Mag. t. 2994, and Fl. Bor. Am. 1. p. 317.

HAB. Borders of sloughs, valley of Columbia River, about Fort Colville. August. (n. 589.)

1. Blepharopappus *scaber*, Hook. Fl. Bor. Am. 1. p. 316. Torr. et Gr. Am. 2. p. 301. Ptilonella scabra, *Nutt.*

HAB. Stony loamy sunny declivities of the mountains of the Cœur d'Aleine and Kooskooskee rivers; very abundant. May. (n. 346.)

1. Lagophylla *ramosissima*, Nutt.—Torr. et Gr. Am. 2. p. 403.

HAB. Stony sunny places, Kooskooskee valley. Rays spreading with the morning sun. June. (n. 408.)

1. Madia *racemosa*, Nutt. (under *Madorella.*)—Torr. et Gr. Am. 2. p. 405.

HAB. Stony sunny places, Kooskooskee valley. Rays spreading in the evening sun. (n. 409.)

1. Matricaria *discoidea*, DC.—Torr. et Gr. Am. 2. p. 413. Tanacetum? suaveolens, *Hook. Flor. Am.* 1. *p.* 327. t. 110.

HAB. Indian camps, valley of Kooskooskee River; very rare further north. Odour of *Tagetes*; always discoid. ⊙. ♂. May. (n. 386.)

1. Artemisia *dracunculoides*, Ph.—Torr. et Gr. Am. 2. p. 416. A. dracunculoides, *var.* glauca, *Bess. in Hook. Fl. Bor. Am.* 1. *p.* 326.

HAB. Common in stony plains on the west side of the Rocky Mountains. Seen at the Devil's Lake in 1839. Sept. (n. 668.)

1. A. *Canadensis*, Mx.—Torr. et Gr. Am. 2. p. 417. A. desertorum, *var.* Hookeriana, *Bess. in Hook. Fl. Bor. Am.* 1. *p.* 326. A. campestris, *Ph.—Richards.*

HAB. Sandy places, banks of Upper Clarke's or Flathead River; rare. Sept. (n. 212.)

3. A. *tridentata*, Nutt.—Torr. et Gr. Am. 2. p. 418.

HAB. About the central ridge of the Rocky Mountains and up from the Platte A. *cana* is predominant: on the west side of the central ridge A. *tridentata* prevails, *cana* having disappeared about the sources of the Columbia.—A shrub, 1-12 feet in height, with stems 5-6 inches in diameter. Sept. (n. 654.)

4. A. *pedatifida*, Nutt.—Torr. et Gr. Am. 2. p. 419.

HAB. On the highest rocky table-lands, near the sources of Missouri River, covering small tracts. Flowers bright orange. June. (n. 14.)—Mr. Gordon finds the same species in the Upper Platte.

5. A. *Ludoviciana*, Nutt.—Torr. et Gr. Am. 2. p. 420.—A. Purshiana, β. *Bess. in Hook. Fl. Bor. Am.* 1. *p.* 322.

HAB. Thickets in sunny, sandy or sterile places ; common over the whole territories of Missouri, Dacotah and Oregon; from St. Louis to the sources of the Mississipi and across to the Upper Columbia. Collected at Flathead River (Upper Clarke's). Sept. (n. 177.)

6. A. *vulgaris*, L.—Hook. Fl. Bor. Am. 2. p. 421. Torr. et Gr. Am. 2. p. 421.

HAB. This is sent separately from, but bears the same number as the preceding, A. *Ludoviciana*, indicating that it is from the same locality.

7. A. *biennis*, Willd.—Hook. Fl. Bor. Am. 1. p. 325. Torr. et Gr. Am. 2. p. 423.

HAB. Saline loamy exsiccated places in the defiles of the calcareous hills of Black's Fork of Upper Colorado. Aug. (n. 103.)

8 A. *frigida*, Willd.—Hook. Fl. Bor. Am. 1. p. 321. Torr. et Gr. Am. 2. p. 424.

HAB. High stony and table-lands, from the Upper Missouri (St. Anthony's Falls) to Flathead River, mostly with *Gaillardia pinnatifida*. Sept. (n. 112.)

1. Gnaphalium *decurrens*, Ives.—Hook. Fl. Bor. Am. 1. p. 328. Torr. et Gr. Am. 2. p. 426.

HAB. On accumulated mould, granite mountains, high plains of Cœur d'Aleine and Spokan country. July, Aug. ♂. Subviscid. (n. 643.)

2. G. *alienum*, Hook. et Arn. Contr. to F. S. Am. in Hook. Bot. Journ. 3. p. 329.

HAB. Arid sandy woods near Tshimakaine, Spokan country. July. (n. 542.)—This is identical with the pretty G. *alienum* described by Dr. Arnott and myself from Mr. Cuming's Chilian collections. We called it "*alienum*," from its being so extremely dissimilar from any other S. American *Gnaphalium*. It is equally unlike any North American one, having the habit of an *Elichrysum*, and the upper scales of the involucre bright rose-colour, the rest pale yellowish.

3. G. *palustre*, Nutt.—Torr. et Gr. Am. 2. p. 427.

HAB. Muddy margins of ponds, Nez Percez valleys. June. (n. 672.)

1. Antennaria *margaritacea*, Br.—Hook. Fl. Bor. Am. 1. p. 329. Torr. et Gr. Am. 2. p. 429. Gnaphalium, *L.*

HAB. Shady moist mountain-woods, Cœur d'Aleine River. June. (n. 436.)

2 A *dioica*, Gærtn.—Hook. Fl. Bor. Am. 1. p. 329. Torr. et Gr. Am. 2. p. 430.—β. parvifolia, *Torr. et Gr.* A. parvifolia, *Nutt.*

HAB. Sandy and stony pine-woods, highlands of Spokan River, July, (n. 486.) and sunny sterile ridges, Upper Platte, covering the surface of the ground with its numerous stolones. July. (n. 444.)

3. A. *luzuloides*, Torr. et Gr. Am. 2. p. 430.

HAB. Sandy pine-woods at Tshimakaine, Spokan country. July. (n. 536.)

4. A. *dimorpha*, Nutt. (*Gnaphalium*).—Torr. et Gr. Am. 2. p. 431.

HAB. Shady sandy pine-woods, Spokan River. August. (n. 479.)

1. Senecio *exaltatus*, Nutt.—Torr. et Gr. Am. 2. p. 439.

HAB. Fertile grassy slopes of Cœur d'Aleine Mountains in light pine-woods: it varies very much in the shape of the leaves, especially in the pubescence, which in shady woods is very long and floccose, almost like spider's web. May. (n. 297.)

2. S. *fastigiatus*, Nutt.—Torr. et Gr. Am. 2. 439.

HAB. Rocky borders of Spokan and Columbia Rivers; not very common. Stem and leaves purplish-glaucous green. August. (n. 575.)

3. S. *hydrophilus*, Nutt.—Torr. et Gr. Am. 2. p. 410.

HAB. Fertile sunny deep grassy borders of Black's Fork of Upper Colorado, near Fort Vasco; rare. Stems hollow, two feet high. August. (n. 250.)

4. S. *Serra*, Hook. Fl. Bor. Am. 1. p. 332. Torr. et Gr. Am. 2. p. 441. S. longidentatus, *DC. Prodr.* 6. *p.* 418.

HAB. Rich meadows, valleys of Kooskooskee and Spokan Rivers. Two to three feet high; many stems rising from one root. July. (n. 473.)

5. S. *rapifolius*, Nutt.—Torr. et Gr. Am. 2. p. 441.

HAB. In the fissures of the granite mountains of Sweet Water River; rare, except at Fort Independance, where it occurs with "*Aplopappus*," (n. 7.) Leaves purplish. (n. 10.)

6. S. *aureus*, L.—Hook. Fl. Bor. Am. 1. p. 333. Torr. et Gr. Am. 2. p. 442. *var.* ε. Balsamitæ, *Torr. et Gr.* S. Balsamitæ, *Muhl.*

HAB. Var. ε. Grassy spots in the stony valley of Sweet Water River. July. (n 202.)

7. S. *canus*, Hook. Fl. Bor. Am. 1. p. 333. t. 116. Torr. et Gr. Am. 2. p. 443.—*var.* 1. *minor;* minus incanus, foliis caulinis omnibus sinuato-lobatis.

HAB. Wet stony places, Gamass prairies, Nez Percez highlands, growing in dense tufts. June. (n. 484); and stony ridges, hills of Upper Platte. July. (n. 483.)—*var.* In a saline pool on a pile of rocks, with *Sedum stenopetalum*, in the plains of Upper Platte and Sweet Water rivers. Leaves deep green. July. (n. 198.)—The species of the group to which S. *aureus*, S. *tomentosus* and S. *canus* belong, are almost inextricable.

HAB. Gravelly hills of Kanzas and Lower Platte Rivers with *Euchroma grandiflora.* May. (n. 252.)

1. Tetradymia *canescens,* DC. in Deless. Ic. 4. t. 60. Hook. et Arn. Bot. Beech. Voy. Suppl. p. 360. Torr. et Gr. Am. 2. p. 447.

HAB. Clayey banks in the desert of Upper Colorado, with *Artemisia cana* and *tridentata.* August. (n. 63.)

1. Arnica *Chamissonis,* Less.—Torr. et Gr. Am. 2. p. 449. A. montana, *α. Hook. Fl. Bor. Am.* 1. *p.* 330.

HAB. Scattered over the high fertile plains near Kooskooskee River; not common. June.—I fear this is nothing more than one of the numerous varieties of A. *montana,* L.

2. A. *cordifolia,* Hook. Fl. Bor. Am. 1. p. 331. Torr. et Gr. Am. 1. p. 450.

HAB. Light open pine-woods along the valley of Cœur d'Aleine River, in warm protected situations, growing in masses. April, May. (n. 309.)

Trib. CYNAREÆ, *Less.*

1. Cirsium *undulatum,* Nutt. (Carduus).—Torr. et Gr. Am. 2. p. 456. C. Douglasii, *DC.*

HAB. Fertile plains of the Lower Platte and Missouri rivers. June. (n. 122.)

2. C. *Hookerianum,* Nutt.—Torr. et Gr. Am. 2. p. 457. Carduus discolor, *Hook. Fl. Bor. Am.* 1. *p.* 302, (*in part.*)

HAB. High plains, Upper Oregon and Missouri territory. June, July. (n. 325).—I fear too near the preceding.

Trib. CICHORACEÆ, *Vaill.*

1. Scorzonella (§. Ptilophora, *Torr. et Gr. mst.*) *nutans,* Gey. mst. (under *Crepis*); glabra, radice tuberosa fusiformi, caule elongato gracili folioso, foliis basi amplexicaulibus linearibus integris varie pinnatifidisque inferne apiceque longe attenuatis, pedunculis gracilibus, capitulis in ramos ultimos seu pedunculos solitariis apice paululum dilatatis,

involucri foliolis exterioribus subquinque ovato-acuminatis brevissimis puberulis, pappi squamis oblongis albis setis *plumosis* triplo longioribus terminatis.

Hab. Dry sunny loamy declivities of Spokan and Cœur d'Aleine mountains. Root (nearly as large as the little finger) succulent and almost transparent, full of a bitterish, milky juice, eaten raw by the Indians. It renews itself every year. Heads nutant before flowering. June. (n. 376).—A very distinct species of *Scorzonella* (if *Scorzonella* be really distinguishable from *Calais*), and forming a section of Messrs. Torrey et Gray, on account of the plumose awns of the pappus. In general habit it a good deal resembles some of the narrow leaved varieties of *Scorzonella laciniata*, Nutt. (*Hymenonema ? laciniatum*, Hook.)

1. Stephanomeria *minor*, Nutt.—Torr. et Gr. Am. 2. p. 472. Lygodesmia minor, *Hook. Fl. Bor. Am.* 1. *p.* 205. t. 103. A.)

Hab. Sterile sunny sandy declivities and on the tableaux of Trappe rocks, high plains of Spokan River. Rays pale lilac. August. n. 440.

2. S. *runcinata*, Nutt.—Torr. et Gr. Am. 2. p. 473.

Hab. Decomposed calcareous rocks, Upper Platte; rare. Grows also in the fissures of claystone rocks at Scott's Bluffs. June, July. (n. 43.)

1. Hieracium *Canadense*, Mx.—Torr. et Gr. Am. 2. p. 475. H. umbellatum, *Hook. Fl. Bor. Am.* 1. *p.* 300.

Hab. Borders of pine-woods, valley of Columbia River near Fort Colville. Common also in Illinois and Michigan. August. (n. 593.)

1. Lygodesmia *grandiflora*, Nutt.—Torr. et Gr. Am. 2. p. 485.

Hab. Gravelly and sandy slopes of the high plains near the banks of Platte and Laramie's Fork; rare. Rays of a rose colour; large. Growing with *Calochortus luteus*. July. (n. 156.)

1. Malacothrix *sonchoides*, Nutt.—Torr. et Gr. Am. 2. p. 486.

Hab. Sterile stony and sandy plateaux near Rock Independance on Sweet Water River; rare: apparently the only locality. July. (n. 40.)

1. Crepis *runcinata,* Torr. et Gr. Am. 2. p. 487. Hieracium runcinatum, *James in Long. et Torr.* Crepis biennis, β. *Hook. Fl. Bor. Am.* 1. *p.* 297. *DC. Prodr.* 7. *p.* 163. Crepidium mucronatum, *Nutt.*

Hab. Saline stony plains of Upper Platte, near Fort Laramie. July. (n. 222.)

2. C. *glauca,* Nutt. (under *Crepidium*).—Torr. et. Gr. Am. 2. p. 488.

Hab. Moist sandy and swampy meadows of Upper Platte and Sweet Water valley: often growing with " *Dodecatheon integrifolium.* July. (n. 155.)

3. C. *occidentalis,* Nutt.—Torr. et Gr. Am. 2. p. 488. Psilochæna occidentalis, *Nutt.*

Hab. Stony argillaceous sunny ridges, hills of Upper Platte, with " *Eriogonum umbellatum ;*" rare. July. (n. 179.)

4. C. *acuminata,* Nutt.—Torr. et Gr. Am. 2. p. 489.

Hab. Found in the dry shady pine-woods at the base of the Spokan Mountains, Tshimakaine. July. (n. 336); and loamy plains within the desert of Upper Platte and Sweet Water rivers, with *Lygodesmia,* 156, and *Calochortus luteus.* Very common on the Upper Columbia. July. (n. 180.)

1. Troximon *cuspidatum,* Ph.—Torr. et Gr. Am. 2. p. 489. T. marginatum, *Nutt.*

Hab. Sunny protected situations, open pine-woods at Tshimakaine, Spokan River valley; rare. July. (n. 398.)

2. T. *glaucum,* Torr. et Gr. Am. 2. p. 490. β. dasycephalum, *Torr. et Gr. l. c.* T. glaucum, *a. Hook. Fl. Bor. Am.* 1. *p.* 300, *and in Bot. Mag. t.* 3462.

Hab. Pine-groves about Tehima ravine, Spokan country. July. (n. 666.)

3. T. *roseum?* Nutt.—Torr. et Gr. Am. 2. p. 490.

Hab. Rocky declivity towards a deep ravine near Lapwai, at Kooskooskee River. The only specimen found. June.

(n. 446.) The involucre is downy in this specimen, and the florets unexpanded. I am doubtful of the identity with T. *roseum.*

1, Macrorhynchus *Chilensis,* Less.—M. heterophyllus, *Nutt.* —*Torr. et Gr. Am.* 2. *p.* 493.

Hab. Sunny rocky slopes of the mountains along the valley of Cœur d'Aleine River. Rays deep yellow. The flowers only expand once and for a few hours at noon. (n. 292.) —This is identical with the Chilian M. *Chilensis.*

2. M. *cynthioides ;* glaberrimus, radice parva tuberosa, foliis omnibus radicalibus glaucis subdistiche insertis anguste lanceolatis integerrimis basi attenuatis equitantibus apice longe acuminatis, scapo nudo foliis longiore.

Hab. Sandy and saline moist places in the valley of Upper Sweet Water River. July. (n. 245.) The pappus is quite that of *Macrorhynchus ;* but the flowers are too young to determine the beaked nature of the fruit. I cannot refer it to any described plant.

4. Mulgedium *pulchellum,* Nutt.—Torr. et Gr. Am. 2. p. 498. M. pulchellum, and M. heterophyllum, *Nutt.* Sonchus Sibiricus, *Richards.—Hook. Fl. Bor. Am.* 1. *p.* 293. Sonchus pulchellus, *Ph.* Lactuca integrifolia, *Ph.*

Hab. Amongst thickets of *Rosa parvifolia,* along the sandy low banks of Lower Platte; also at the Kooskooskee. July. (n. 147.)

2. M. *leucophæum,* DC.—Torr. et Gr. Am. 2. p. 499. Sonchus leucophæus, *Willd.—Hook. Fl. Bor. Am.* 1. *p.* 293.

Hab. Thickets, valley of Upper Columbia River. Six to ten feet high. "Rays dull orange-yellow." ♂. Aug. (n. 596.)

(*To be continued*).

BOTANICAL INFORMATION.

MALVA VERTICILLATA, *Linn., detected in a corn-field in Wales, by* JAMES MOTLEY, ESQ.

(*With a Figure,* TAB. VII.)

During the summer of 1845, James Motley Esq. discovered in a corn-field at Llanelly, Glamorganshire, a *Malva*, which he and Mr. Borrer and myself for a long time were disposed to consider an undescribed species, though from its locality, not unlikely to have been imported with grain or seed of some kind from the continent. "It is indeed," writes its discoverer to Mr. Borrer, "quite a mystery how this plant could get into the field," where indeed very few specimens have been found. "It varies in height from a few inches to (in my garden) between 3-4 feet. When in this tall state, its habit is peculiar, being very erect, and the stem, until autumn, simple: if luxuriant, the flowers are very much crowded and almost sessile, 8-10 in number, but when the plant is smaller, one, two or three, (usually two), and borne on longer stalks. The number of carpels varies considerably; but so far as I have seen, they all possess the same peculiarities of structure, whether few or many."

Mr. Borrer had the kindness to communicate to me a small wild specimen from the field at Llanelly, and one, about twice the size, raised from wild seed, and of which the upper three-fourths of the plant is here represented. (TAB. VII.) The most remarkable characteristic of the species is the absence of margin (or angle to the margins) to the carpels, so that there are deep grooves or channels, as it were, between them, and they only seem to touch or unite at the axis of the entire fruit. There is, further, a slightly elevated dorsal line on each carpel, and lines radiating at the sides from the axis and extending to the rounded margins. In my own rich Herbarium I could not at first detect the species, and was on the point of publishing it as new, when, on examining carefully the fruit of *Malva verticillata* in the Linnæan Herbarium, I did not hesitate to refer Mr. Motley's plant to it. The Linnæan sample seems to be a cultivated one, and China is the country given as the habitat. Native wild specimens I have not seen; but I possess the same species from the Botanic Garden of Glasgow; and the "*Malva microcarpa*" of Montbret, from Egypt, does not appear different. The M. *verticillata* of Turczaninow,* from Dahuria, in my Herbarium, has no perfect fruit; Bernhardi has constituted of that a new M. *pulchella.*

I am happy to have my view of the identity of this plant with the Linnæan M. *verticillata* confirmed by so careful an observer as Mr. Borrer, who writes thus,—"I have looked again at the Linnæan specimen of *Malva verticillata,* and agree with you that it seems the same species as the Welsh intruder; though the cuneato-cordate base of the larger leaves, their unproduced middle segment, and broader and more rounded crenatures, rather staggered me. The carpels look just like the unripe ones of ours. The stem is, as Jacquin figures, and Cavanilles describes it, 'spica densa aphylla terminatus,' which is not the case in the Welsh plants. Cavanilles, however, represents it as leafy to the summit; and it is observable, that both the Linnæan specimen and the figure in Jacquin show one branch with naked clusters like the main stem, and one with small leaves among the flowers. I can well suppose that the leaves have fallen off from the others."

Since the fruit is nowhere, so far as I am aware, correctly delineated or described, the accompanying representation and the following specific character may not be unacceptable to the readers of our Journal.

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* In Herb. Nostr. and Turcz. Cat. Pl. Baikal, n. 273.

MALVA VERTICILLATA, *L.*

Annua, erecta, foliis longe petiolatis cordatis subprofunde 5-angulatis angulis lobisve obtusis crenato-serratis, floribus axillaribus fasciculatis brevi-petiolatis v. subsessilibus, petalis calycem (demum fructus omnino tegentem) paulo superantibus, carpellis 10-12 in orbem totidem-lobatum dispositis orbiculari-reniformibus glabris dorso uninerviis marginibus rotundatis lateribus alte radiatim venosis-venis dorso (nisi ad margines) obsoletis.

M. *verticillata*, Linn. Sp. Pl. p. 970. Jacq. Hort. Tab. 40, Cav. Ic. 2. p. 78. t. 25. f. 3. De Cand. Prodr. 1. p. 433.

(TAB. nostr. VII. *Fig.* 1. fruit ; *f.* 2. single carpel ; *f.* 3. seed :—*magnified.*

HAB. China, *(Linnæus.)*

Although the discovery of this *Mallow* in Wales has thus been, I trust, a means of enabling us in future better to distinguish the species, I fear we must not venture to consider it a native of Great Britain. It is not described even as naturalized anywhere in Europe. "Is it not odd, however," Mr. Borrer further remarks, "that *Malva crispa* should ever have been thought a var. of this? It is rather remarkable that Mr. Motley has seen the M. *crispa* in the same field, but concluded that it was from its being kept in gardens for garnishing dishes at table. Is it possible that after all they are but vars.? I do not recollect the fruit of M. *crispa.*"—In regard to M. *crispa*, though it is said to be a native of Syria, I possess only a cultivated specimen in my Herbarium from our English gardens; and the fruit of that, though nearly resembling that of M. *verticillata*, is yet different. The margin of the carpels is not rounded off, but comes to an angle, so as not to present a distinct furrow between the carpels; the back of the carpels is consequently flatter; and the radiating lines from the sides do not become obsolete at the margins, but extend across the back to the dorsal line: such is the case with the excellent figure in Reichenbach's "Icones Fl. Germ. et Helv. Malvaceæ, Tab. 166. n. 4834."

Mr. Watson's CYBELE BRITANNICA.

We are glad to be able to announce the recent appearance of the first volume of another important work, bearing on the geographical distribution of Plants, from the pen of H. C. WATSON, ESQ.; entitled "CYBELE BRITANNICA; *or British Plants and their Geographical Relations.*"

A Table of the Contents of this volume, and a specimen to show the author's mode of treating the Distribution of species,—selecting for this purpose a plant whose distribution requires further inquiry,—are here subjoined; that our readers may form some idea of the value of the information given.

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the species, 67.—Difficulties of preparing the first Cybele, 67, 68.—Request for corrections, 68.—Pronunciation of the name Cy-be-le, 69.

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APPENDIX, page 465.

Note explanatory of the resemblance between the 'Types of Distribution' adopted in this work, and the 'Floras' of Professor Edward Forbes, page 465.

(*Example of the "Distribution of Species.*")

143. ELATINE HEXANDRA, *De C.*

Area 1 2 3 * 5 * 7 8 9 * * * * * 15.
South limit in Cornwall and Sussex.
North limit in Kincardine and Perth shires.
Estimate of provinces 10. Estimate of counties 15.
Latitude 50—58. British (?) type of distribution.
Agrarian region. Inferagrarian—Superagrarian zones.
Descends to the coast level, in the Peninsula.

Ascends to 50 or 100 yards, in England.

Range of mean annual temperature 52—46.

Native. Lacustral. The gradual manner in which the area of this little plant has been extended, and its localities increased in number, yields a striking illustration of the close attention bestowed upon British botany during the present century. Even so late as the date of the English Flora, 1824, we find its author recording only two localities for this species, in Shropshire and Berkshire. My collection of localities now indicates its occurrence in Cornwall (Rev. W. S. Hore), Sussex (Mr. Borrer), Surrey (Rev. W. H. Coleman), Berkshire (Mr. T. F. Forster), Warwickshire (Dr. Lloyd), Shropshire (Rev. A. Bloxam), Anglesea (Mr. C. C. Babington), Leicestershire (Mr. Churchill Babington), Cheshire (Dr. Wood), Perthshire (Mr. James Macnab), Kincardineshire (Dr. Dickie). It seems so probable that other stations will yet be discovered for this minute plant, that I have ventured to add to the number of counties and provinces, in the line of estimates; although I could scarce select the two provinces and four counties in which it is most likely to be discovered: South Wales and the Lakes seem very probable. In too many counties to be referred to the "local" type; yet known in too few to be strictly "British."

HERBARIUM *of the late M. le Colonel* BORY DE ST. VINCENT.

The following particulars respecting the Cryptogamic Collections of M. Bory de St. Vincent have been circulated in France.

La mort vient d'enlever aux Sciences Naturelles, M. le Colonel Bory de Saint-Vincent. Les botanistes savent qu'il s'occupait spécialement de Cryptogamie, et que parmi les plantes de cet ordre, ce sont surtout les Algues et les Fougères qu'il affectionnait. Aussi, ceux qui, comme nous, ont

pu voir les collections qu'il a laissées et qu'il avait en partie faites lui-même dans ses longs voyages, connaissent leur importance, soit sous le rapport du nombre des échantillons, soit sous celui de leur magnifique préparation. Cet herbier cryptogamique sera mis en vente dans deux ou trois mois, et nous pensons que les personnes qui cultivent principalement l'étude de ces familles, nous sauront gré de leur annoncer qu'il se compose d'un grand nombre de *cartons-boîtes* de format in-folio, dont 30 de Fougères, 2 de Marsiléacées, Salviniées et Lycopodiacées, 10 de Mousses, 2 d'Hépatiques, 3 de Champignons, 27 de Lichens, 33 d'Algues et 3 de Polypiers flexibles. La collection de Fougères, le Colonel en ayant publié un grand nombre, est surtout la plus riche, en espèces et en individus d'une infinité de localités différentes. On en pourra juger par la seule tribu des Acrostics qui a été récemment travaillée et publiée par M. le Professeur Fée. Il en est de même des Algues, dont M. Bory s'est occupé toute sa vie d'une façon spéciale, car son premier Mémoire, qui date de 1797, traite du genre *Conferva* de Linné. Les Lichens foliacés et fruticuleux ont aussi un très-grand nombre de représentans dans cet herbier. Nous n'avons pas examiné en détail les cartons de Mousses et d'Hépatiques, et nous ne saurions guères juger autrement que par leur nombre de l'intérêt dont peut être pour la science leur acquisition. Nous pensons néanmoins qu'on trouvera là une foule de types, en beaux échantillons, des espèces rapportées par lui des îles d'Afrique, et communiquées à Bridel et à Schwægrichen, qui les ont décrites dans leurs ouvrages, et qu'en outre il y a encore une foule de nouveautés enfouies dans les cartons de ces deux familles.

L'herbier mis en ordre ne compose pas toute la collection; le Colonel laisse encore un magasin d'environ cinquante paquets, où ont été entassés des envois nombreux qu'il n'a pas eu le temps d'examiner parce qu'ils lui sont venus pendant son séjour en Afrique, ou depuis le commencement de la longue maladie à laquelle il a succombé. Les paquets sont tous de même format que les cartons-boîtes.

Plus belle ni plus riche collection Cryptogamique n'a été offerte depuis long-temps aux amateurs.

C. M.

Figure and Brief description of a new LISIANTHUS *from New Grenada.*

(TAB. VIII.)

Among other very beautiful *Gentianeæ* detected by Mr. Purdie, during his late mission for the Royal Gardens of Kew in New Grenada, is the following *Lisianthus*, which well deserves the name of

Lisianthus *splendens;* scandens, ramis elongatis teretibus, foliis petiolatis ovatis brevi-acuminatis subcoriaceis 5-nerviis, umbellis terminalibus pendentibus, calyce campanulato brevi, lobis parvis rotundatis, corollæ tubo lagenæformi (inflato basi gracili cylindraceo) fauce contracta limbi lobis patentibus rotundatis crenulatis, staminibus inclusis, antheris mucronatis, capsula cylindracea calycem 4-plo excedente. (Tab. VIII).

HAB. Hills of red clay near Canoas, province of Antioquia, New Grenada. *W. Purdie*, 1846.

A most lovely and very distinct species of the extensive genus *Lisianthus*, with long climbing glabrous terete stems and branches, ovate acute leaves not much unlike in shape and texture those of the great Periwinkle, and terminal umbels of red drooping flowers, each flower nearly two inches long: I have counted as many as eight of these flowers in a single corymb. The form of the corolla is peculiar, much contracted at the base of the tube, thence to the contracted faux singularly inflated; the limb is rather short, of 5 rounded crenulated lobes. Each anther has a distinct blunt mucro. The style (as well as the stamens) is included and the stigma is bilabiate.

As young growing plants of this are reared from seeds, sent by Mr. Purdie to the Royal Gardens of Kew, we trust to

be able ere long to give a coloured figure from flowering specimens in the Botanical Magazine.

Tab. VIII. *Fig.* 1. Young fruit. *f.* 2. Immature fruit. *Nat. size.*

FLORÆ TASMANIÆ SPICILEGIUM; *or, Contributions towards a Flora of Van Diemen's Land; by* J. D. HOOKER, M.D. F.R.L. & G.S.

(*Continued from p.* 125.)

GOODENIACEÆ.

1. Velleia *montana,* n. sp.; acaulis, pilosa v. glabrata, foliis omnibus radicalibus stellatim patentibus petiolatis spathulato-lanceolatis obovato-lanceolatisve integerrimis, scapis plurimis brevibus ramosis, bracteis distinctis, calycis foliolis lineari-oblongis basi edentulis, corolla unilabiata v. fissa, ovario styloque puberulis.

HAB. Hampshire Hills, Marlborough and Western Mountains (3000 feet); *Gunn, Lawrence*:—*v. v. n.*

Herba depressa. *Radix* crassa, fibris descendentibus aucta, collo brevissimo. *Folia* e collo orta, stellatim patentia, terræ appressa, 1-2 unc. longa, pilis patulis plus minusve hispidula v. glabrata, subcoriacea, luride viridia. *Scapi* folio breviores, ter pluriesve divisi, calycesque patentim pilosi. *Bracteæ* lineares, v. lineari-oblongæ. *Corolla* unilabiata, nunc dorso fissa et subbilabiata, basi integra ovario accreta. *Stamina* libera. *Capsula* parva, glaberrima, loculis 2-4-spermis.

2. Goodenia *graminifolia,* n. sp.; cæspitosa, acaulis, foliis glaberrimis flaccidis anguste lineari-elongatis lineari-lanceolatisve acutis integerrimis, scapo gracili subpaniculatim ramoso, pedicellis calycibusque patentim pilosis, bracteis anguste linearibus, corolla bilabiata flava, laciniis, alatis lateralibus ab intermedia discretis.

HAB. George Town; *Gunn.*

Herba flaccida. *Radix* fibrosa. *Folia* omnia radicalia, erecta v. subpatentia, 2-3 unc. longa, 1-3 lin. lata, acuta, v. acuminata, uninervia. *Scapus* foliis æquilongus v. paulo longior, pilosus, pilis albidis patentibus, superne paniculatim dichotome divisus, 3-5-florus; pedicellis filiformibus, bracteis 2-4-elongatis, anguste linearibus. *Flores* erecti, ½ unc. longi; ovario obovato glanduloso-piloso. *Corolla* flava, laciniis spathulatis emarginatis dorso pubescentibus marginibus crenatis. *Stigma* ciliatum; *stylo* patentim piloso.

STYLIDEÆ.

1. Stylidium *perpusillum*, n. sp.; tenue, glanduloso-puberulum, foliis omnibus radicalibus lineari-spathulatis obovatisve, scapis apice uni-tri-floris, pedicellis elongatis, tubo corollæ brevissimo, fauce nuda laciniis subdentatis labello inappendiculato, capsula sphærica.

HAB. George Town; *Gunn.*

Species perpusilla gracilis, S. *calcarato* simillima, sed ecalcarata. *Folia* carnosiuscula, vix 2 lin. longa, obtusa, stellatim patentia. *Scapi*, v. caules, 1 v. plures, 1-2-pollicares, filiformes, erecti, subflexuosi, apice 1-v. 3-flori. *Pedicelli* laterales ascendentes, elongati, intermedio erecto abbreviato. *Corolla* alba, petalis calyce bis longioribus obtusis, membranaceis.

LOBELIACEÆ.

Nov. Gen. Streleskia, *Hook. fil.*—*Calyx* 4-lobus, lobo inferiore plerumque bifido; rarius 5-lobus, lobis subequalibus. *Corolla* campanulata, tubo integro, brevi, lato; limbo oblique 4-fido v. 5-fido; lobis 2 inferioribus minoribus, calyce longioribus, erecto-patentibus. *Staminum filamenta* brevia, basibus dilatatis ciliatis, tubo corollæ vix adnatis; antheris inclusis, liberis, 2 inferioribus apice setaceo-aristatis. *Stigma* bifidum, rarius trilobum. *Capsula* oblonga, coriacea.—Herba *pusilla, scapigera, glaberrima*; foliis *omnibus radicalibus*; scapo *unifloro*; floribus *horizontalibus* v.

cernuis.—Genus novum *Isotomæ* affine, amicissimo comiti de Strzelecki perigrinatori inclyto et indefesso dicatum.

1. Streleskia *montana*, n. sp.

HAB. Mount Wellington, *Gunn.*

Annua? Folia lanceolato-spathulata, ½-¾ unc. longa, obscure dentata. *Scapus* 1-2 uncialis nudus. *Flos* ⅓ unc. longus. *Capsula* erecta.

ERICEÆ.

1. Gaultheria *lanceolata*, n. sp.; caule repente, ramis erectis glabratis, foliis glaberrimis anguste elliptico-lanceolatis acutis serratis, racemis paucifloris, fructu coriaceo-carnoso basi calycis dilatati et incrassati immerso.

HAB. Ben Lomond; *Gunn.*

Fruticulus pedalis. *Rami*-6-8 unciales, tenues, apices versus parce pilosi v. glabrati. *Folia* coriacea, ⅔ unc. longa, 2 lin. lata. *Flores* apices versus ramulorum axillares, breviter pedicellati. *Capsula* magna, coriaceo-carnosa, ovata, truncata, irregulariter rupta? *Pisi sativi* magnitudine, basi calycis ampliati et incrassati sed non baccati immersa. —G. *hispidæ* affinis, et primo visu nil nisi varietas glabrata et humilior; sed indole fructus satis diversa. *Caulis* (fid. *Gunn*) semper repens.

2. Gaultheria *depressa*, n. sp.; caule repente divaricatim ramoso, ramis prostratis apices versus pilis paucis sparsis, foliis divaricatis horizontaliter patentibus ellipticis ovatis v. obovato-rotundatis obtuse serratis ciliatis utrinque glaberrimis reticulatim venosis, fructu calyce baccato omnino immerso.

HAB. Ben Lomond; *Gunn.*

Fruticulus 6-uncialis. *Caulis* repens, nudus, pennæ passerinæ crassitie. *Rami* divaricati, horizontaliter patentes, 1-3 unc. longi, tenues, puberuli v. glabri, setis sparsis patentibus hirtelli. *Folia* coriacea, plana, breviter petiolata, 4-5 lin. longa, plerumque late obovata v. elliptico-ovata, obtusa, indistincte serrata, sæpissime setoso-ciliatis. *Fructus* axillaris, brevissime pedicellatus, fere

½ unc. diametro, carnosus, globosus, pedicello bracteato. *Capsula* parva, ad apicem calycis intra segmenta ejus immutata immersa, coriacea.—Species habitu forma magnitudineque foliorum et fructus valde distincta.

3. Pernettya (Perandra) *Tasmanica*, n. sp.; depressa, divaricatim ramosa, ramulis puberulis, foliis patulis elliptico-lanceolatis acutis integerrimis v. obscure serrulatis, pedicellis axillaribus basi 3-4-bracteolatis, antheris muticis, ovario disco 5-lobo cincto:—an genus proprium.

HAB. Hampshire Hills, Port Arthur, and Mount Wellington; *Backhouse, Gunn.*

Fruticulus 2-3 unc. altus, ramosus, ramis vagis abbreviatis divaricatim ramulosis; ramulis sub lente puberulis. *Folia* 2-3 lin. longa, coriacea, nitida, super concava. *Pedicelli* folio breviores, curvati, basi bracteis paucis imbricatis cucullatis ciliatis suffulti. *Calycis laciniæ* ovatæ, obtusæ. *Corolla* ovata, ore 5-dentato, dentibus subrecurvis. *Stamina* 10, inclusa, libera; filamentis puberulis, supra basin dilatatis, deinde filiformibus. *Antheræ* parvæ, late oblongæ, apicibus muticis, poris magnis hiantibus dehiscentes. *Discus* inconspicuus, lobis obtusis filamentis alternantibus. *Ovarium* 5-loculare; *ovulis* plurimis, placentis axillaribus affixis. *Bacca* depresso-sphærica, rubra, calyce immutato suffulta.

Ab congeneribus differt antheris; muticis hinc nomen subgenericum proposui *Perandra*, e *πηρος* (cornubus destitutus) et *ανηρ* compositum.

EPACRIDEÆ.

1. Cyathodes *adscendens*, n. sp.; glaberrima, ramis adscendentibus, foliis breviter petiolatis erecto-patentibus imbricatis elliptico-oblongis utrinque obtusis apice mucrone tabescente super nitidis subter glaucis striatis, floribus solitariis, pedicello brevi 1-bracteolato, corollæ urceolatæ segmentis barbatis, tubo pilis deflexis raris, drupa depresso-sphærica 8-loculari.

HAB. Top of Mount Wellington; *Gunn, Lawrence*:—*v. v. n.*

Caulis brevis. *Rami* plurimi, validi, pedales, cortice atro tecti, prostrati, deinde adscendentes; ramuli foliis undique laxe imbricati. *Folia* ¼-⅓ unc. longa, valde coriacea, bis longiora quam lata. *Flores* inter folia occlusi, parvi. *Drupa* rubra.—Corollæ segmenta barbata tubusque pilosus a genere aliena sunt; sed habitu, indole corollæ, bracteis, drupaque multiloculari *Cyathode* convenit, et certe affinis est C. *stramineæ* et *dealbatæ*.

2. Lissanthe *divaricata*, n. sp.; foliis divaricatis deflexisve lineari-subulatis pungentibus marginibus recurvis scaberulis super convexis subter glaucis 1-3-nerviis, pedicellis axillaribus bracteatis, calyce ebracteolato, corollæ tubo fauceque nudis segmentis pilis raris patentibus subbarbatis.

Hab. Hobart Town, Mount Wellington, Swan Port; *Backhouse, Gunn*:—*v. v. n.*

Fruticulus erectus, ramis rigidis horridus. *Rami* validi, horizontaliter patentes, apices versus fastigiatim ramulosi. *Folia* plurima, ½-unc. longa, ½ lin. lata, omnia horizontaliter patentia v. deflexa, rigida, dura, aceroso-pungentia. *Flores* ad apices ramulorum axillares, solitarii, penduli. *Pedicelli* ⅓ folii æquantes, curvati, bracteis imbricatis late ovatis fere ad calycis basin tecti. *Calycis foliola* concava, ciliata, corollæ tubo ⅓-¼ breviora. *Corolla* substraminea, tubo cylindraceo, intus glabro, segmentis patulis, intus pilosis, pilis longis laxis sparsis. *Bacca* rubra, 5-locularis v. abortu 1-4-locularis.

3. Leucopogon *obtusatus*, n. sp.; fastigiatim ramosus, ramulis puberulis, foliis lineari-oblongis breviter petiolatis utrinque rotundatis subpiculatis cartilagineo-marginatis scaberulis marginibus planis v. recurvis supra lævibus subter glaucis 3-5-nerviis nervis lateralibus ramosis, spicis axillaribus 2-4-floris, corollæ tubo brevi, drupis globosis.

Hab. Mount Wellington and Grass-tree Hill; *Gunn, Lawrence*:—*v. v. n.*

Fruticulus pedalis, erectus, ramosus, ramis erectis. *Folia*

$\frac{1}{4}$-$\frac{1}{3}$ unc. longa, ter longiora quam lata, sed latitudine varia, supra medium ad apicem latiuscule cartilagineo-marginata, margine sæpe tabescente scaberula, nervo medio subter infra apicem incrassato. *Spicæ* foliis brevior bracteata. *Flores* parvi; segmentis calycinis corollæ tubo æquilongis. *Drupa* baccata, globosa, angulis destituta.

Lissanthe montanæ simillimus, sed corollæ segmenta barbatis.

4. Decaspora *Gunnii*, n. sp.; ramulis hirtellis, foliis lineari-oblongis ellipticisve planis obtusiusculis marginibus scaberulis 3-5-nerviis, spicis (plurimis) abbreviatis axillaribus paucifloris folio multoties brevioribus, floribus parvis, fauce tuboque corollæ glaberrimis.

HAB. Hampshire Hills; *Gunn.*

Suffruticulus prostratus, distiche divaricatim ramosus. *Rami* graciles, foliosi, crassitie pennæ anatinæ. *Folia* brevissime petiolata, subcoriacea, $\frac{1}{3}$ unc. longa, $\frac{1}{5}$ lata, utrinque subacuta, super avenia, subter 5-costata, marginibus ciliolatis. *Flores* in axillis foliorum glomerulati, brevissime pedicellati, pedunculo pedicellisque bracteolatis. *Baccæ* carnosæ, purpureæ, depresso-sphericæ, siccæ 10-sulcatæ.

5. Pentachondra *mucronata*, n. sp.; erecta, ramosa, ramulis puberulis, foliis oblongo-lanceolatis lineari-oblongisve acuminatis pungentibus subter striato-nervosis, marginibus cartilagineis ciliolatis, floribus axillaribus solitariis, calycibus tenuiter ciliatis 4-bracteatis tubo corollæ $\frac{1}{2}$ brevioribus.

HAB. Grass-tree Hill, and Lake Echo; *Gunn*:—*v. v. n.*

Suffruticulus erectus, 2-6-uncialis, ramosus, ramis tenuibus. *Folia* sparsa v. laxe imbricata, $\frac{1}{3}$ unc. longa, $\frac{1}{4}$ lata, coriacea, planiuscula. *Pedicelli* breves, bracteolati. *Calycis foliola* oblonga, obtusa, bracteolis calycinis late ovatis bis longiora. *Corolla* foliis æquilonga, erecta, tubo cylindraceo; lobis brevibus, intus dense barbatis.

Valde affinis *Leucopogoni Frazeri* species Nova Zelandica (*L. Bellignanus*, Raoul "Choix des Plant. Nov. Zel." t. xii) sed differt conspicue foliorum nervis.

6. Pentachondra *ericæfolia*, n. sp.; caule diffuso prostrato ramoso, ramis brevibus adscendentibus apice villosis, foliis erectis linearibus lineari-lanceolatisve apice incrassatis supra concavis dorso basi marginibusque ciliatis, calyce 8-bracteato, corollæ tubo intus extusque pilis sparsis deflexis, laciniis intus densissime barbatis.

HAB. Marlborough; *Gunn.*

Rami virgati, spithamæi ad pedalem. *Rami ramulique* basi squamis dense tecti. *Folia* sub 2 lin. longa, coriacea, dorso 3-5-nervia, sulcata, marginibus pilis albidis pulcherrime ciliatis. *Flores* inter fasciculos foliorum sessiles, ramulos brevissimos terminantes, ¼ unc. longi. *Calycis foliola* bracteæque ciliatæ. *Corollæ tubus* extus intusque pilis deflexis subvillosus, laciniæ elongatæ copiosissime barbatæ. *Stamina* subexserta. *Squamulæ hypogynæ* 5, elongatæ. *Fructus* deest.

7. Epacris *hirtella*, n. sp.; ramulis hirtis, foliis ovatis acuminatis pungentibus glaberrimis coriaceis planis margine (minutissime) serrulatis ciliatisque.

HAB. Macquarrie Harbour; *Gunn.*

Fruticulus erectus?; *ramulis* divaricatis cicaticatis pilis patentibus hirtellis. *Folia* coriacea, subnitida, 3-4 lin. longa, supra obscure 1-nervia, subtus vix striata. *Capsulæ* apices versus ramulorum pedicellatæ, pedicellis curvatis, basi bracteolatis. *Foliola calycina* 1½ lin. longa, ovato-lanceolata, acuminata, marginibus obscure ciliatis.

8. Epacris *virgata*, n. sp.; erecta, ramis gracilibus elongatis parce ramosis laxe foliosis superne puberulis, foliis (parvis) planis breviter petiolatis elliptico-ovatis obovatisve obtusis minutissime serrulatis uninerviis subter obscure striatis, capsulis brevissime pedicellatis axillaribus subracemosis, bracteolis parvis, foliolis calycinis obtusiusculis cum pedunculo folio subæquilongis marginibus tenuissime ciliatis.

HAB. Asbestos Hills; *Gunn.*

Fruticulus bi-tripedalis, ramis erectis elongatis cortice rufofusco tectis apices versus puberulis. *Folia* (exemplaribus fructiferis) remota, 2-3 lin. longa, plana, erecta, ramo plerumque appressa. *Capsulæ* secus ramulos sparsæ, subspicatæ, solitariæ, axillares, calyce bracteisque pallide rufo-flavis tectæ, stylo filiformi elongato terminatæ. *Pedicelli* erecto-patentes, bracteis parvis late ovatis imbricatis concavis tecti, vix 1 lin. longi. *Calycis foliola* bracteis superioribus ½ longiora, obtusiuscula, margine tenuiter pubescente v. subciliato. *Capsulæ* valvæ lineares, calyce breviores.—Affinis ut videtur E. *obtusifoliæ*.

9. Epacris *microphylla*, n. sp.; fruticulus depressus ramosissimus, ramulis puberulis, foliis minimis imbricatis remotisve et cauli appressis nunc erecto-patentibus coriaceis sessilibus breviter oblongis obtusis super concavis subter obtuse carinatis marginibus vix scaberulis, floribus apices versus ramulorum brevissime pedicellatis, bracteis imbricatis foliolisque calycinis (sordide albis) obtusis ciliolatis, corolla calycem vix superante late campanulata, lobis obtusis.

Hab. Summit of Western Mountains; *Gunn*.

Caules ramique primarii validi, lignosi, cortice atro tecti, ramulis ultimis filiformibus brevibus foliosis. *Folia* sub ½-1 lin. longa, plerumque imbricata nunc remota et cauli appressa, luride viridia, juniora dorso basin versus puberula, omnia basi lata sessilia. *Inflorescentia* ob colorem pallidum bractearum calycisque conspicua. *Flores* apices versus ramulorum terni v. quini, rarius solitarii. *Corolla* albida, ore aperto, staminibus inclusis.

10. Epacris (§ cordifolia) *Gunnii*, n. sp.; erecta, virgata, ramis gracilibus hirsutis puberulisve, foliis patulis cucullatis recurvis breviter petiolatis late ovato-cordatis acuminatis pungentibus integerrimis glaberrimis, floribus axillaribus solitariis subsessilibus, bracteis brevibus subacutis, foliolis calycinis ovatis acutis tubo corollæ æquantibus marginibus ciliolatis, antheris inclusis.

Hab. Marlborough and Hampshire Hills; *Gunn*, *Lawrence*:—*v. v. n.*

Fruticulus erectus, 1-2-pedalis, gracilis, virgatus, ramis pubescentibus pilisve patulis subhirsutis, cortice rufo. *Folia* plurima, uniformia, patenti-recurva, valde concava, breviter petiolata, basi sub-profunde cordata, lobis rotundatis, obscure nervosa, 4 lin. longa, æquilata, marginibus integerrimis. *Flores* secus ramos plurimi, axillares, subsessiles, cum pedicellis brevibus folium paulo superantes.—Ab E. *pulchella*, cui affinis, differt, præcipue forma calycis obtusioris.

11. Sprengelia *macrantha*, n. sp.; foliis ovato-lanceolatis rigidis recurvis acuminatis, floribus magnis capitato-congestis, antheris liberis copiose barbatis.

Hab. Recherche Bay; *Gunn*.

Fruticulus pedalis. *Rami* divaricati, læves, ecicatricati. *Folia* imbricata, recurva, brevia (ut in S. *montana*) mediocriter acuminata, non pungentia, rigida. *Capitula florum* 2-3 unc. diametro, subhemisphærica, e sicco sordide albida nec colorata. *Flores* congeneribus duplo majores, ½ unc. longi. *Antheræ* omnino liberæ.

Species distinctissima, quamvis characteribus difficillime nota.

12. Richea *Gunnii*, n. sp.; fruticulosa, foliis amplexicaulibus late-subulatis recurvis cucullatis marginibus minutissime denticulatis, floribus sessilibus v. brevissime pedicellatis, corolla late et brevissime conica obtusa. R. *dracophyllæ var.* Brown, *DC. Prodr.* p. 555.

Hab. Mount Wellington and Western Mountains; *Gunn*:—*v. v. n.*

Fruticulus bipedalis, parce ramosus. *Folia* uncialia, rigida. *Racemi* 1-2 unciales. *Corollæ* latiores quam longæ, subhemisphericæ.

Clarissimus *Gunn*, qui hanc pro specie a R. *dracophylla* omnino diversa habet, secutus sum, num exemplaria intermedia nunquam a nobis visa sunt. Præter magnitudinem habitumque, indole corollæ racemoque angustiore diversa videtur.

13. Richea *scoparia*, n. sp.; fruticulosa, vix ramosa, ramis strictis, foliis strictis erectis e basi vaginante lineari-subulatis rigidis pungentibus, racemis erectis, corollis obovatis superne inflatis.

HAB. Mount Wellington, and Valentine's Peak; *Lawrence, Backhouse, Gunn*:—*v. v. n.*

Fruticulus rigidus, erectus v. basi adscendens, 8 unc. ad pedalem. *Rami* foliosi, basi reliquiis persistentibus foliorum tecti, nec annulati. *Folia* persistentia, 3 unc. longa, basi ¼ unc. lata, rigida, dura, erecta, v. subrecurva, dense imbricata, pungentia, marginibus minutissime serrulatis, basi late amplexicaulia, supra basin contracta et gradatim ad apicem angustata, paulo concava. *Racemus* cauli æquilongus, strictus, erectus. *Corollæ* ⅓ unc. longæ.—Species distinctissima.

LABIATÆ.

1. Micromeria *repens*, n. sp.; sparse pilosa v. glaberrima, caule repente ramoso, ramis prostratis v. adscendentibus tenuiter puberulis, foliis breviter petiolatis ovato-cordatis obtusis super pilis sparsis albidis hispidiusculis subter punctatis, floribus axillaribus breviter pedicellatis subsolitariis, calycibus urceolatis puberulis striatis, segmentis brevibus late subulatis recurvis intus pilis inflexis barbatis, corollis brevibus.

HAB. Woolnorth; *Gunn.*

Caules graciles, pedales, radicantes. *Rami* 2-5 unc. longi. *Folia* ⅓-uncialia. *Flores* vix maturi, pauci, inconspicui.

2. Micromeria *affinis*, n. sp.; puberula, erecta v. adscendens, foliis ovatis v. ovato-cordatis obtusis nunc ovato-lanceolatis subter punctatis, calycibus brevibus obconicis glabratis puberulisve laciniis subulatis tubum ⅓ æquantibus pilis inflexis barbatis, corollis calycem vix superantibus, staminibus inclusis.

HAB. Hampshire Hills, Woolnorth, Circular Head; *Gunn.*

Species variabilis, sed a M. *gracili* indole calycis semper distinctissima.

Caules 1 unc. ad spithamæam, simplices v. e basi ramosi, graciles, erecti, adscendentes v. rarius prostrati, uti folia pilis brevibus puberuli, nunc fere glaberrimi. *Folia* 2 lin. ad ½ unc. longa, ut in M. *gracili*, sed plerumque latiora.

Verticillastra axillaria v. terminalia, 2-6-flora. *Calyces* obconici, multistriati, supra basin constricti; fructiferi turgidi, profundius striati, pallide virides v. purpurascentes.

I am doubtful whether this, or the M. *gracilis*, Benth., should be referred to the *Mentha gracilis* of Brown: the present is by far the commoner plant in the colony, though having the calyx shorter and less truly "cylindrical."

CONVOLVULACEÆ.

1. Wilsonia *Backhousii*, Hook. fil.; glaberrima, caule prostrato ramoso, ramis adscendentibus, foliis carnosis linearibus subacutis basi obscure petiolatis integerrimis, floribus axillaribus sessilibus foliis æquilongis, corollæ tubo gracili calyce intus barbato bis longiore laciniis linearibus, staminibus exsertis, stylo 2-3-fido, ovario 2-3-loculari, loculis 1-ovulatis.

HAB. Great Swan Port; *Gunn* (Legit *Backhouse.*)

Caulis spithamæus et infra, valde ramosus, ramis adscendentibus foliosis. *Folia* glaberrima, carnosa, compressa, ½-¾ unc. longa. *Calycis tubus* angulatus, glaberrimus, dentibus intus barbatis subulatis. *Corollæ tubus* gracilis, superne paulo ampliatus, laciniis reflexis ter longior. *Stamina stylique* rami longe exserti, atro-fusci. *Ovarium* 1-2 loculare, loculis semper 1-ovulatis.—Planta admodum singularis, speciei Drummondi (numero 21) ad Swan River lecta, proxima et forsan non diversa.

GENTIANEÆ.

1. Mitrasacme *perpusilla*, Hook. fil.; glaberrima, caule gracili vix ramoso, foliis ovatis subacutis brevissime petiolatis, floribus pedicellatis solitariis terminalibus, calycis 4-fidi segmentis lanceolatis acutis recurvis pilosiusculis, corollæ laciniis recurvis marginibus puberulis, stylo ad anthesin indiviso, stigmate integro.

HAB. Circular Head; *Gunn.*

Caules suberecti, filiformes, 1-2-unciales, basi nudi, nodosi, simplices bis terve divisi. *Folia* 2-3 lin. longa, glaberrima, suprema nunc setis paucis terminata. *Pedicelli* brevissimi, terminales, uniflori.

2. Mitrasacme *divergens*, n. sp.; glaberrima, annua, caule filiformi erecto e basi simpliciusculo dichotome ramoso, foliis ovatis v. ovato-lanceolatis, floribus longe pedicellatis, calycibus late bifidis segmentis triangularibus, corolla 4-fida, ovario stipitato, stylo ad anthesin basi hiante, stigmate obscure bilobo.

HAB. Circular Head; *Gunn*.

Erecta, 2-4-uncialis, caule rigido, ramis elongatis paniculatim 2-3-chotomis. *Folia* 2-3 lin. longa. *Pedicelli* fructiferi 1-2 unc. longi, nudi, stricti. *Corollæ* tenuissimæ, hyalinæ, calyce breviores. *Stamina* parva. *Ovarium* stipitatum, stipite æquilongo. *Capsulæ* pro planta majusculæ, calycis tubo apice late bilabiato immersæ.

PLANTAGINEÆ.

1. Plantago *glabrata*, n. sp.; foliis lanceolatis dentatis v. integerrimis parce hispido-pilosis basi nudis, scapis folio ter longioribus appresse pubescentibus, spica ovata sub 15-flora, calycis foliolis glabratis, corollæ laciniis late orbiculari-ovatis marginibus involutis.

HAB. Lake St. Clair; *Gunn*.

P. *hispidæ* proxima et valde affinis, differt tota planta glabrata v. parce hispida, spicis brevibus paucifloris calycisque foliolis glabris.

2. Plantago *Tasmanica*, n. sp.; parce hispida, demum glabrata, foliis plurimis lanceolatis oblongo-lanceolatisve integerrimis v. obscure sinuato-dentatis 1-nerviis basi nudis sericeo-barbatisve, scapis plurimis adscendentibus appresse pilosis, spicis breviter cylindraceis densis multifloris, bractea glabrata margine ciliata, calycis foliolis acutis glaberrimis, corollæ laciniis ovato-lanceolatis marginibus convolutis, capsulæ loculis dispermis.

HAB. Mount Wellington; *Gunn*.

Radix plerumque valida, descendens. *Folia* 2-4-uncialia, basi sæpissime pilis pallide brunneis sericeo-barbata, sub ½ unc. lata, utrinque pilis rigidis subhispida, rigidiuscula. *Scapi* foliis duplo longiores. *Spica* ¾-1 unciam longa. *Flores* parvi.

Species distinctissima, flores multoties minores quam in P. *glabrata* et P. *hispida*, corollæ laciniis forma spicisque densifloris differt.

3. Plantago *leptostachys*, n. sp.; glabra, foliis lineari-lanceolatis petiolatis basi sericeo-barbatis integerrimis v. obscure sinuatis pilosiusculis glaberrimisve uninerviis subcoriaceis, scapis elongatis gracilibus superne parce appresse pilosis, spicis cylindraceis gracilibus, floribus (paucis) dissitis, calycibus glaberrimis, corollæ laciniis oblongo-lanceolatis marginibus convolutis, capsulæ loculis dispermis.

Hab. Lake St. Clair; *Gunn.*

Species gracilis. *Radix* crassiuscula. *Folia* basi in collum sæpissime extus dense sericeo-barbatum sessilia, 1½ unc. longa, vix ¼ unc. lata, in petiolum gracilem angustata. *Scapi* foliis ter quaterve longiores, tenues. *Spicæ* cylindraceæ, 1-1½ unc. longæ, vix 2 lin. diametro, floribus plus minusve dissitis parvis glaberrimis.—P. *Tasmanicæ* indole florum glabritieque affinis, differt statura, foliorum formaque spica, laxiflora.

4. Plantago *paradoxa*, n. sp.; pumila, foliis lanceolatis sessilibus breviter petiolatisve integerrimis sinuato-dentatisve pilis paleaceis albidis plus minus hispidis et transversim fasciatis, scapis brevissimis paleaceis 1-3-floris, calyce glabrato, corollæ laciniis ovatis acutis marginibus involutis, capsulæ loculis 4-spermis.

Hab. Lake St. Clair; *Gunn.*

Species parva, terræ appressa. *Folia* stellatim patentia, ¼-2 unc. longa, 2-4 lin. lata, supra præcipue pilis laxis paleaceis articulatis interrupte transversim fasciata. *Scapi* brevissimi, vix 1 lin. longi, validi (hinc flores in axillas foliorum quasi sessiles) dense paleacei. *Flores* 1-3, dum terni collaterales.—*Planta* ob folia fasciata admodum singularis, ob capsulæ loculos polyspermos habitumque P. *carnosæ, monanthos, barbatæque* affinis.

POLYGONEÆ.

1. Polygonum (Muhlenbeckia) *Gunnii*, n. sp.; foliis oblongo-hastatis apice rotundatis apiculatis muticisve basi truncato-cordatis angulis acutiusculis deflexis marginibus vix crenulatis.

HAB. Circular Head and Macquarrie Harbour; *Gunn. :—v. v. cult.*

2. Polygonum (Muhlenbeckia) *axillaris*, n. sp.; pumilum, prostratum, foliis orbicularibus obcordatis elliptico-oblongisve retusis muticis apiculatisve, floribus axillaribus solitariis pedicellatis.

HAB. Marlborough; S. Esk; Vale of Belvoir; *Gunn :—v. v. n.*

Suffruticulus prostratus, ramosus, diffusus, 6 unc. ad pedalem. *Folia* graciliter petiolata, 3-4 lin. longa, subæquilata. *Flores* pedicellati, axillares, solitarii; pedicelli petiolo subæquilongi.

PHYTOLACCEÆ.

Nov. Gen. DIDYMOTHECA, *Hook. fil.*—Dioica. *Perianthium* profunde 4-lobum; lobis 2 majoribus, late ovatis, subacutis, persistentibus. FL. MASC. *Stamina* sub 9, serie unica plus minusve regulari inserta; *filamenta* nulla; *antheræ* sessiles, lineares, obovatæ, utrinque obtusæ; loculis connatis, rima laterali dehiscentibus. FL. FŒM. *Carpella* didyma, valde compressa, columnæ centrali brevi adnata; *styli* 2, crassi, recurvi, papillosi, marginibus in carpella replicatis. *Ovula* in carpellis solitaria, columnæ centrali brevi ventrali affixa, adscendentia, exostomate fungoso. *Fructus* didymus, carpellis compressis, dorso dehiscentibus. *Semina* uncinatim conduplicata, basi arillo (e micropyle orto) brevi aucta; *testa* radiatim undulata et transversim rugosa, coriacea, brunnea; *albumine* subcarnoso. *Embryo* homotrope arcuatus; *radicula* infera.—Suffrutex Gyrostemoni *affinis, glaberrimus, erectus, ramis ramulisque plerumque strictis gracilibus.* Folia *sparsa, linearia, semiteretia, subacuta.* Flores *in axillis foliorum superiorum subspicati, solitarii, breviter pedicellati.*

1. Didymotheca *thesioides.*

HAB. Cataracts, near Launceston; *Lawrence, Gunn.*

Fruticulus 2-3-pedalis, olivaceo-viridis. *Radix* lignosus. *Rami* ramulique e basi divisi, plerumque striati, ultimi gracillimi. *Folia* carnosa, uncialia, angusta. *Flores* parvi, nutantes, masculi 2 lin. lati. *Pedicelli* vix 2 lin. longi. *Perianthium* parvum. *Stamina* brevia, apice latiora, omnina sessilia, plerumque simplici serie inserta, nunc irregulariter inserta, semper circa areolam centralem planam disposita. *Pollen* sphæricum, obscure 3-lobum, flavum.

CHENOPODEÆ.

1. Atriplex (Theleophyton) *chrystallina,* n. sp.; herbacea, glaberrima, caule prostrato ramoso, ramis brevibus adscendentibus una cum foliis floribusque papillis aquosis opertis, foliis sessilibus elliptico-oblongis obtusis integerrimis carnosis, floribus axillaribus, masculis pentandris fasciculatis, perianthio quinquelobo, fœmineis solitariis bifidis, utriculo perianthio ampliato urceolato apice late bilabiato incluso. —An genus proprium?

HAB. Sandy sea-coast; *Gunn.*

Herbæ sabulicola, succulenta, aquosa, tota lucido-papillosa. *Caules* prostrati, nudi, pennæ corvinæ crassitie, ramosi; ramis adscendentibus, 2-4 unc. longis, foliosis. *Folia* 2-4 unc. longa plana, integerrima. *Flores masculi* ad apices ramulorum plurimi. *Perianthium* campanulatum, ad medium obtuse 5-lobum. *Stamina* 5, filamentis exsertis. *Fl. Fœm.* inconspicui, axillis foliorum inferiorum sessiles, parvi. *Perianthium* compressum, fructiferum late incrassatum, labiis latis. *Semen* compressum, obscure punctatum: *embryo* annularis.—An nov. gen.? (*Theleophyton* dicendum). Ob perianthium fl. masc. 5-lobum habitumque *Atriplice* diversissimum.

2. Chenopodium (Rhagodia?) *congestum*, Hook. fil.; caule suffruticoso angulato ramoso, ramis dense foliosis, foliis erectis petiolatis rhombeo-ovatis obtusiusculis eroso-dentatis sinuatisve utrinque pulverulentis, spicis axillaribus terminalibusque brevibus densifloris obtusis, perianthiis polygamis depressis 5-partitis, foliolis dorso crasse carinatis, staminibus 1-5 nonnullis sterilibus, stylis 2.

HAB. Hobart Town; *Gunn*:—*v. v. n.*

Suffrutex ½-1-pedalis, ramis divaricatis. *Caulis* lignosus, obtuse angulatus, sulcatus. *Rami* subfastigiati, dense foliosi, pulverulentes. *Folia* ½ unc. longa, in petiolum angustata, basi cuneata, crassiuscula, plana, opaca, marginibus sinuato-dentatis obtusiusculis. *Spicæ* foliis æquilongæ v. breviores, densifloræ, obtusæ. *Flores* minimi, glomerati. *Perianthium* planum, depressum, horizontale, subdisciforme; foliola 5, incurva, dorso incrassata, carinata. *Stamina* nulla, v. 1-5, fertilia numero varia, rarissime omnia fertilia. *Ovarium* depressum, stylo brevi in stigmata 2 desinentia; pericarpio carnosulo. *Fructus* ignotus.

THYMELEÆ.

1. Pimelea *filiformis*, Hook. fil.; glaberrima, caule prostrato gracillimo simpliciusculo parce folioso, foliis oppositis lineari-oblongis ellipticisve subacutis brevissime petiolulatis planis marginibus tenuiter recurvis, floribus pedunculatis in capitulum terminale pauciflorum dispositis v. brevissime spicatis, rachi pilosa, perianthio glabrato, tubo gracili, laciniis elongatis, staminibus exsertis.

HAB. Launceston; *Gunn*, *Lawrence*.

Caulis pedalis, gracillimus, teres. *Folia* ½-¾ unc. longa. *Capitula* 5-6-flora, floribus brevissime pedicellatis. *Perianthii tubus* parce sericeus, mox glaberrimus.

Species distinctissima; P. *spicatæ*, *Br.* affinis.

2. Pimelea *nivea*, Lab.—Planta variabilis; foliis imbricatis v. dissitis planis marginibusve recurvis, subter plus minusve dense tomento incano appresso tectis, ovatis obovatisve sessilibus v. breviter petiolatis.—P. *incanam*, Br. distinguere nequeam.—Varietates sequentes formas maxime conspicuas indicant.

Var. α. *erecta*, foliis plerumque ovatis basi rotundatis marginibus recurvis, capitulis solitariis ramulos elongatos terminantibus.

Hab. New Norfolk, Launceston, Hobarton, Recherche Bay, Western Mountains; *Gunn, Lawrence*:—*v. v. n.*

Exemplaria typica a clariss. Gunn ad Recherche Bay (olim a Labillardiero ipso exploratam) lecta pulcherrime nivea et incana instar *Corream albidam* evadunt. *Folia* in eadem planta imbricata v. dissita, obovata, ovata, v. ima basi cordata, marginibusque planis v. recurvis variant.

Var. β. *thyrsoidea*, caule ramisque erectis, ramulis confertis sæpissime polycephalis.

Hab. Launceston, New Norfolk, George Town; *Gunn*:—*v. v. n.*

Var. γ. *nummularia*; erecta v. basi prostrata, foliis late ovato-oblongis orbiculatisve basi cordatis.

Hab. Hobarton, New Norfolk; *Gunn, Lawrence*:—*v. v. n.*

SANTALACEÆ.

1. Exocarpus *nanus*, Hook. fil.; fruticosus, caule procumbente, ramis teretibus sulcatis, ramulis compressis, internodiis brevissimis superne in folia 2 subulata divaricata dilatatis, spiculis sessilibus, nucibus parvis perianthio 5-partito suffultis.

Hab. Mountain tops; *Gunn*:—*v. v. n.*

Habitus E. *humifusi*, sed minor, ramis ramulisque brevioribus angulatim flexuosis, internodiis brevissimis, superioribus præcipue compressis, superne in folia 2 subulata coriacea dilatatis, perianthio 5-fido, nucibus parvis.

PROTEACEÆ.

1. Grevillea *australis*, Br.

Var. *α. erecta;* foliis lanceolatis subulatis lineari-lanceolatisve marginibus subrecurvis:—frutex erectus.

HAB. Common.

Var. *β. linearifolia;* foliis anguste linearibus marginibus insigniter revolutis:—frutex erectus.

HAB. Launceston, &c.; *Gunn:—v. v. n.*

Var. *γ. planifolia;* foliis lineari-obovatis planiusculis:—frutex erectus.

HAB. Launceston; *Gunn.*

Var. *δ. montana;* foliis brevibus lineari-lanceolatis:—fruticulus humilis, depressus.

HAB. Marlborough, Hampshire Hills, Western Mountains, &c.; *Gunn:—v. v. n.*

Var. *ε. brevifolia;* foliis brevibus lineari-oblongis obovatisve:—fruticulus depressus.

HAB. Western Mountains; *Gunn.*

Var. *ζ. subulata;* foliis brevibus linearibus coriaceis, marginibus ad costam revolutis:—frutex erectus.

HAB. S. Esk; *Gunn.*

2. Isopogon *ceratophyllus*, Br.; foliis planis longe petiolatis triternatim divisis laciniis divaricatis rigidis enerviis ultimis lineari-subulatis pungentibus, strobilis sessilibus axillaribus v. ramulos brevissimos terminantibus, squamis distinctis apice scariosis glaberrimis basi densissime sericeo-tomentosis, nuce elongata compressa fasciculo pilorum dense barbata.

HAB. Flinders' Island, Bass' Straits; *Gunn.*

Fruticulus humilis, depressus, squarrosus. *Folia* 1½-2-uncialia, petiolo elongato, lamina circumscriptione latior quam longa, laciniis 1 lin. latis. *Strobilus* ½-unc. diametro, late ovoideus v. sphœricus, e squamarum apicibus brunneis basibusque albo-sericeis quasi marmoratus. *Flores* non vidi. *Nux* angusta, stylo basi terminata utrinque pilis strictis dense obtecta.

3. Conospermum *taxifolium*, Br.; ramulis sericeis, foliis linearibus supra medium parum dilatatis acutis enerviis coriaceis utrinque tenuissime sericeis, spicis versus apices ramulorum confertis folio brevioribus, perianthii laciniis tubo æquilongis acutis.

HAB. Spring Bay; *Backhouse.*

Fruticulus ramis virgatis, appresse sericeis. *Folia* plurima, adscendentia, uncialia, vix 1 lin. lata, plana, enervia. *Flores* inconspicui. *Perianthii tubus* bracteis longior. *Nux* obconica, apice pappo elongato coronata.

4. Persoonia *Gunnii*, n. sp.; ramulis foliisque junioribus pube tenui sparsis, foliis obovato-spathulatis v. ovato-oblongis apice rotundatis retusis apiculatisve coriaceis, floribus solitariis folio ½ brevioribus puberulis, pedunculis 1-floris bractea brevi suffultis, antheris linearibus muticis, stylis rectis ovario glabro monospermo longioribus.

Var. β. *alpina;* foliis lineari-oblongis :—an sp. distincta?

HAB. May-day Plains; *Gunn,—var. β.* Lake St. Clair; *Gunn.*

Frutex cortice subscarioso lamelloso, ramulis foliis junioribus perianthiisque pube tenui sæpissime aureo sparsis. *Folia* valde coriacea, uncialia (in var. β. longiora, 1½ uncialia) fere ⅓ unc. lata, siccitate transversim rugulosa. *Flores* sparsi, brevissime pedicellati, pedicello bractea parva suffulto, ⅓ unc. longo, alabastris clavatis, perianthii laciniarum marginibus introflexis, corrugatis. *Ovarium* lineari-ovoideum, 1-loculare. *Bacca* glaberrima, ovoidea, cœrulea, ½ unc. longa stylo persistente recto terminata, putamine osseo. —Varietas β. (vix species distincta) fructifera tantum visa, foliis longioribus præcipue differt: *baccæ* omnino ut in var. α.

EUPHORBIACEÆ.

1. Micranthemum *hexandrum*, n. sp.; fruticosum ramulis glaberrimis ultimis puberulis, foliis glaberrimis erecto-patentibus ternatim fasciculatis anguste lineari-oblongis acuminatis, perianthii foliolis late ovatis margine integerrimis v. obscure erosis, staminibus 6.

Hab. Launceston; *Scott, Lawrence, Gunn.*

Frutex erectus; ramis teretibus, strictis, virgatis; cortice cinereo-fusco. *Folia* coriacea, breviter petiolata, ⅓ unc. longa, 1½ lin. lata, integerrima. glaberrima, uninervia. *Flores* axillares, solitarii v. fasciculati. *Pedunculi* folio breviores, validi. *Perianthii foliola* 3 exteriora interioribus duplo majora. *Stamina* biserialia, exteriora petalis exterioribus lobisque ovarii imperfecti opposita, interiora iis alterna. *Antheræ* extrorsæ.

2. Phyllanthus *australis*, n. sp.; pusillus, ramosissimus, ramis brevibus adscendentibus, ramulis compressis, foliis simplicibus alternis (parvis) coriaceis lineari-oblongis mucrone acuminatis, pedicellis solitariis validis simplicibus erectis, floriferis folio subæquilongis, fructiferis elongatis, perianthii foliolis oblongis coriaceis, ovarii disco 6-lobo capsula globosa. E. *thymoides*, Knowlt.? (nescio an descripta sit) vid. Steudel Nomencl.

Hab. Hobart Town and Circular Head; *Gunn:—v. v. n.*

Radix lignosus, descendens. *Collum* breve, in ramos perplurimos divisum. *Rami* ramulosi, prostrati, 2-6 unc. longi, apicibus ramulisque curvatis adscendentibus compressis subangulatis. *Folia* plurima, 2 lin. longa, 1 lata, coriacea, mucrone discolorato deciduo acuminata, 1-nervia. *Flores* 1 lin. diametro, inconspicui, rufo-fusci, pedicello valido.

3. Phyllanthus *Gunnii*, n. sp.; suffrutescens, ramis elongatis, ramulis tenuibus strictis angulatis, foliis simplicibus alternis orbiculari-obovatis late oblongisve rarius obcordatis, petiolo brevi gracili, pedicellis plurimis fasciculatis simplicibus, floriferis folio brevioribus, fructiferis elongatis gracilibus folia subæquantibus.

Hab. Circular Head and George Town; *Gunn.*

Rami graciles, teretes, crassitie pennæ corvinæ; ramulis elongatis, 6 unc. ad pedalem, tenuibus, angulatis, strictis, v. paulo curvatis, subteretibus, basi bracteis ovatis acutis stipulæformibus auctis. *Folia* plurima, ½ ad ¾ unc. longa, forma varia, semper lata, et basi abrupte angustata, apice plerumque rotundata, nunc retusa v. late emarginata, rarius apiculata. *Flores* numerosissimi, parvi. *Pedicelli* seni, graciles, curvati, basi bracteolati. *Perianthii foliola* oblonga. *Capsula* valde depressa, obscure lobata, v. potius obtuse angulata, 2 lin. diametro, pallide fusco-castanea: seminibus atro-fuscis; valvis conformibus.

URTICEÆ.

1. Parietaria *squalida*, n. sp.; setoso-pubescens, setis basi bulboso-incrassatis, caule prostrato basi ramoso nudo angulatim flexuoso, ramis erectis divisis crassiusculis pubescentibus, foliis (parvis) breviter petiolatis late ovato-cordatis integerrimis utrinque setoso-pubescentibus, floribus glomeratis axillaribus tribracteatis, bracteis oblongis obtusis dorso setosis, perianthio profunde 4-partito, staminibus 4, ovario compresso late ovato, stigmate sessili plumoso, nuce ovata subacuta sub-compressa.

HAB. Circular Head; *Gunn.*

Annua? Radix vix lignosa. *Caules* 2-3 unc. longi, prostrati, flexuosi, nudi, ramis basi adscendentibus deinde erectis, laxe foliosis, 4 unc. longis, crassitie pennæ passerinæ. *Folia* siccitate luride viridia, opaca, 3-4 lin. longa, petiolo plerumque brevi, rarius foliis æquilongo. *Flores* parvi.—Speciei Novæ Zælandiæ simillima: differt præcipue foliis basi cordatis.

2. Urtica *lucifuga*, n. sp.; herbacea, tota setis patentibus sparsa, pube nullo, foliis longe petiolatis oppositis membranaceis late ovatis lineari-oblongisve basi cordatis acuminatis grosse dentatis dentibus sinubusque conformibus acutis, spicis gracilibus compositis patentibus, masculis petiolo æquilongis v. longioribus rarius abbreviatis, fœmineis plurimis brevioribus pendulis densifloris.

β. *linearifolia;* foliis longioribus lineari-elongatis brevi-petiolatis subduplicato-serratis.

HAB. Hobart Town and Circular Head; *Gunn;—v. v. n.*

Herba 1- ad 3-pedalem, laxa, flaccida, parce ramosa, tota setis urentibus sparsa. *Folia* forma varia, basi stipulis deciduis 3 lin. longis instructa, petiolo 1-4 unc. longo, gracili, lamina æquilonga v. longiore, semper basi cordata, in var. β. 6 unc. longa, vix 1 lata. *Fl. masc.* majusculi; perianthii foliolis glabratis. *Nuces* elliptico-ovatæ, compressæ.

Varietas β. forma foliorum tantum recedens ad hanc speciem a clariss. Gunn refertur.

(*To be continued*).

Description of a New Species of Lysipoma, *from the* Andes *of* Columbia; *by* J. D. Hooker, M.D. R.N., F.L.S. *&c.*

(*With a Figure,* Tab. IX. A.)

Lysipoma *muscoides*, n. sp.; caulibus brevibus dense cæspitosis suberectis, foliis densissime imbricatis erectis linearibus obtusis marginibus dorsoque concavo superne ciliatis subcarnosis, floribus inter folia summa sessilibus v. brevissime pedicellatis, laciniis calycinis oblongis obtusis segmentisque corollæ brevibus dorso ciliatis. (Tab. IX. A.)

Hab. Summit of Quindies, Andes of Columbia. *W Purdie.*

Planta perpusilla, muscosa, late extensa, læte viridis. *Radix* fibrosa, fibris crassis elongatis hic illic fibrillosis. *Caules* parce ramosi, densissime cæspitosi, unciales, una cum foliis ¼-½ unc. lati. *Folia* perplurima, densissime imbricata, 1½ lin. longa, anguste linearia, obtusa, super concava, dorso convexa, pilis marginalibus laxis, flexuosis. *Flores* minimi, inconspicui, nunc inter folia occlusi. *Pedunculus* brevissimus, inter folia summa solitarius, axillaris. *Calycis tubus* obconicus, nunc angulatus et obpyramidalis; laciniis tubo æquilongis, coriaceis, obtusis. *Corolla* paullo curvata, calycis laciniis bis longior; tubo dorso fisso, cylindraceo, glaberrimo; segmentis brevibus, obtusis, dorso apicibusque ciliatis. *Filamenta* basi corollæ inserta, tubo adnata, plana, membranacea, inferne libera, superne in tubum brevem coalita. *Antheræ* connatæ, apicibus barbatis, 2 inferioribus appendicibus subulatis apice instructis. *Stylus* cylin-

draceus; stigmate bilabiato. *Capsula* subcoriacea, turbinata, apice, mediante operculo disciformi, dehiscens. *Semina* pauca, angulata.

At first sight, this curious little species resembles some tufted moss, rather than a flowering plant, but on examination proves to be a plant of the natural order *Lobeliaceæ*, assuming on the Andes of Columbia a tufted mossy habit, in common with many of the *Caryophylleæ*, *Violarieæ*, *Compositæ* and *Junceæ* of that elevated chain. As a species, it is totally distinct from any of its congeners; four of which, all natives of the loftiest mountains of Peru and Columbia, are figured by Humboldt and Kunth.

Tab. IX. A.—*Fig.* 1. *Lysipoma muscoides* of the nat. size; *f.* 2. leaf; *f.* 3. flower; *f.* 4. corolla laid open; *f.* 5. stamina; *f.* 6. vertical section of immature capsule:—*magnified.*

Notes on SPHÆROCARPUS TERRESTRIS, *Mich.; by* GEORGE FITT, ESQ.

(*With a Figure*, Tab. IX. B.)

(Mr. Fitt having been fortunate in detecting this little plant abundantly near Great Yarmouth, as recorded in the Phytologist, No. 61. p. 544, and being able to watch the progress of its fructification, has favoured us with the following particulars and the beautiful drawing from which our plate is engraved, Tab. IX. B.)—Ed.

SPHÆROCARPUS TERRESTRIS, *Mich.*

Hab. The specimens, from which the observations are made, were found, generally, on clover layers at Bradwell, Suffolk. In the mild moist January of 1846 the plant was very abundant, producing its capsules in plenty from about the middle of February to the middle of March: in the early part of April it had disappeared entirely.

Plant consisting of a plane, slightly and bluntly lobed *thallus*,

$\frac{1}{4}$ to $\frac{1}{2}$ an inch in diameter, of a thin, reticulated structure, attached to the earth by numerous fibrous radicles, and bearing, in clusters growing from its superior surface, (in large specimens sometimes as many as 100), obovate bladders or *perianths*, of a structure similar to, but more strongly reticulated than, the thallus itself. *Perianths* varying in size, the largest about $\frac{1}{10}$th of an inch in length, with an entire margined perforation at the summit. Each perianth, when not barren, produces, growing from its base within, an orange-shaped capsule $\frac{1}{20}$th of an inch in diameter, bearing on its upper flattened side a short, conical process or *style. Capsule* of a similar reticulated structure to the perianth, but much more delicate and transparent, and when viewed under a strong magnifying power, the spaces between the reticulations are seen to be filled up with numerous delicate little bladders or cells. It bursts irregularly, and contains from 200 to 300 perfectly spherical seeds, enveloped, in an early state, in a transparent watery fluid, which disappears as the capsule ripens. This fluid dries, on glass, in the form of irregular hexagons, of a greenish hue, which may probably be the cells which have contained the seeds, but if so, they are invisible, when wet, owing to their extremely delicate structure. *Seeds* very minute, appearing to the naked eye like yellow dust: when magnified, they are seen to be of the same reticulated structure as the rest of the plant, though of a less firm texture, and yellowish colour, turning brown by exposure. Mingled with the seeds, are a small number of bright green coloured cells, occurring singly, or two or three together. The plant externally is glaucous green.

TAB. IX. B.—Sphærocarpus terrestris. *Fig.* 1. thallus and tufts of perianths, *nat. size*; *f.* 2. a portion of the same, *magnified*; *f.* 3. a perianth containing a ripe capsule, *highly magnified*; *f.* 4. a capsule, *greatly magnified*; *f.* 5. seeds, *magnified*, shewing the liquid which surrounds them in the capsule, dried in the form of hexagons, and the small green cells which occur among the seeds; *f.* 6. three seeds, *very highly magnified; f.* 7. *highly magnified* portion of a broken capsule; *f.* 8. a broken capsule, with some seeds adhering; *f.* 9. a small tuft, *natural size,* shewing frond and radicles.

Brief characters of some New MOSSES, *collected in* NEW GRANADA *by* MR. W. PURDIE, *indicated by* W. WILSON, ESQ.

(*With* 2 *Plates,* TABS. X. XI.)

1. Andræa *subenervis,* (Hook. et Wils.); caule elongato parce ramoso, foliis laxis patentibus ellipticis obtusiusculis subenerviis, perichætialibus majoribus erectis, theca exserta. (TAB. X.)

HAB. Paramo of Ruiz, with *Polytrichum trichodon.* (*Purdie.*)

Stems 2 inches long, and more, erect. Leaves oblong-elliptical, obtuse, slightly apiculate, concave, greenish purple, with a very obscure broad nerve, not reaching half way.

Allied to A. *laxifolia,* (Hook. fil. et Wils.), but differing in the broader elliptical, not subulate leaves. It also approaches *Acroschisma Wilsoni* (Hook. fil.) in the formation of the capsule.

TAB. A. subenervis.—*Fig.* 1. Plants: *nat. size; f.* 2. upper portion of a fertile plant; *f.* 3. 4. 5. leaves; *f.* 6. 7. capsules in different states:—*magnified.*

2. Polytrichum *trichodon,* (Hook. et Wils.); caule subsimplici, foliis erectis ovato-lanceolatis acutis canaliculatis integerrimis, theca obliqua suberecta ovata microstoma, operculo rostrato, peristomii dentibus 16 angustissimis, calyptra subnuda. (TAB. X.)

HAB. Paramo of Ruiz, on volcanic ashes near the line of perpetual snow. July, 1846. (*Purdie.*)

Stems about half an inch long, or more. Leaves soft, very acute, lamellated on the upper surface, brownish. Seta ¾ of an inch long, thick. Capsule not compressed, large for the size of the moss. Beak of the operculum inclined. Teeth of the peristome 16, pale, very long and narrow, united at the base by a common membrane. Calyptra naked, except a few setulæ at the apex, brown. Spores yellow and small.

Allied to P. *compressum*, (Hook. et Wils.), but differing quite in the peristome, having only 16 teeth, as in *Cephalotrichum* of Bruch and Schimper. The male flowers we have not seen. In this moss the peristome, more evidently than in other species, is found to consist of two laminæ, the inner one continuous with the sporular sac.

P. trichodon. *Fig.* 1. Plants: *nat. size; f.* 2. 3. leaves; *f.* 5. transverse section of a leaf; *f.* 6. perichætium; *f.* 7. calyptra; *f.* 8. capsule and lid; *f.* 9. capsule without lid; *f.* 10. outer, and *f.* 11. inner lamina of peristome:—all more or less *magnified.*

3. P. *ciliatum*, (Hook. et Wils.); caule longissimo subsimplici, foliis erectis confertis basi vaginantibus ovato-subulatis carinatis ciliatis, theca semicylindrica demum horizontali, calyptra pilosiuscula. (Tab. X.)

Hab. Paramo de Pamplona, New Granada, upon a marly bank; rare. Sept. 1845. (*Purdie.*)

Stem above 12 inches in height, usually simple, but in consequence of innovations, it appears to have short lateral branches. Leaves much crowded, erect, the lower ones white as they decay, when dry appressed, fringed with long white ciliæ, the upper side covered with lamellæ. Seta about 2 inches long. Capsule at first erect, ovate oblong, destitute of apophysis; at length horizontal, flat on the upper side as in P. *Magellanicum*, its nearest ally. Operculum with a very short straight beak. Calyptra yellowish-brown, slightly hairy both at the apex and at the base. Dioicous.

A very singular species, sufficiently well marked by its crowded, erect, ciliate leaves.

P. ciliatum. *Fig.* 1. 2. Plants: *nat. size; f.* 3. leaf; *f.* 4. transverse section of a leaf; *f.* 5. immature capsule with operculum; *f.* 6. old capsule; *f.* 7. teeth of peristome; *f.* 8. calyptra:—all more or less *magnified.*

4. Dicranum *speciosum*, (Hook. et Wils.); caule longissimo subramoso, foliis erecto-patentibus e basi ovato-lanceolata longissime lineari-attenuatis apice subserrulatis siccitate spiraliter convolutis, nervo latiusculo, theca oblonga erecta, operculo longirostro. (Tab. XI.)

Hab. New Granada. (*Purdie.*)

Stems above 12 inches high (loosely tufted ?); leaves 6-7 lines long, rather crowded, lower ones subsecund, at times deflexed, the uppermost erect, channelled, the nerve rather broad and distinct only near the base, yellowish; those of the perichætium convolute and larger. Seta 2 inches long, yellowish. Capsule subcylindrical, erect. Peristome dark red, the teeth small, cloven half-way, but the segments united at the apex. Operculum as long as the capsule. Spores rather large and greenish.

Allied to D. *speirophyllum*, (Montagne,) which differs, according to the description, in the leaves: "remote, spreading and divaricate, lanceolate, toothed at the apex, nerve very narrow."

Dicr. speciosum. *Fig.* 1. Plant: *nat. size; f.* 2. leaf; *f.* 3. transverse section of ditto; *f.* 4. 5. capsules with and without operculum; *f.* 6. tooth of peristome and spores.

5. D. *sclerocarpum*, (Hook. et Wils.); caule ramoso, foliis setaceis solidinerviis integerrimis basi dilatatis, theca suberecta oblique apophysata. (Tab. XI.)

Hab. New Granada, (*Purdie*); Guadeloupe, (*C. S. Parker, Esq.*)

Stem an inch long, branched. Leaves erect, subsecund, rather rigid, the nerve thick, and occupying all the upper part of the leaf, those of the perichætium larger. Seta pale, it thickens at the apex and forms an oblique apophysis below the capsule, which is without striæ, pale brown, and of thick texture. Operculum with a long beak. Annulus present. Dioicous.

Allied to D. *subulatum* and to D. *Perrotetii* (Mont.);

differing in the singular aspect of the harder capsule, and also in the more rigid leaves.

Dicr. sclerocarpum. *Fig.* 1. Plants: *nat. size*; *f.* 2. 3. 4. 5. leaves; *f.* 6. calyptra; *f.* 7. capsule with operculum; *f.* 8. capsule with peristome annulus; *f.* 9. teeth of peristome; *f.* 10. mature calyptra:—all more or less *magnified.*

6. Neckera *densa.* (Tab. XI.)

Hypnum densum, (*Swartz.*)

A few specimens of this moss have been sent mixed up with *Neckera luteo-virens* (Taylor), which it very closely resembles. The fruit, hitherto unknown, proves it to be a *Neckera:* it scarcely differs from *Neckera luteo-virens,* except in the fragile leaves, which are narrower and plicato-striate, and in the more slender stems.

Neck. densa. *Fig.* 1. Plant: *nat. size*; *f.* 2. leaf; *f.* 3. perichætium and young capsule; *f.* 4. perichætium and mature capsule, with lid; *f.* 5. the same removed from the perichætium:—all more or less *magnified.*

Figure and Description of a new Cardamine *from New Granada, by* W. J. H.

(*With a Plate,* Tab. XII.)

Cardamine picta, *Hook.*

Glabra, caule elato subrobusto angulato flexuoso ramoso, foliis pinnatisectis, foliolis 7-11 folior. inf. oblique ovatis petiolulatis hinc basi auriculatis reliquis ovatis lanceolatisve omnibus grosse incisis mucronato-serratis, racemis elongatis foliosis (v. si mavis pedicellis solitariis axillaribus) floribus speciosis purpureis, sepalis lato-ovatis concavis membranaceis erectis atro-fuscis, petalis obovato-spathulatis venosis stylo aciculari brevioribus calycem triplo superantibus, siliqua lineari-compressa stylo longo gracillimo terminata. Tab. XII.

Hab. Sides of rivulets, Paramo of Ruiz, New Granada. March, 1846. *W. Purdie.*

Among some curious Cruciferous plants sent home from the high mountains of New Granada by Mr. Purdie, is the really beautiful *Cardamine* here represented from the banks of streams on the Paramo of Ruiz. It is remarkable for its large size, some of the specimens being three feet in length, with leaves a span or more long, and then not inaptly resembling the foliage of some *Erodium*, (especially *Erodium maritimum*); and the first aspect of the large purple flowers, and the long beaked fruit, intermingled in the foliage, remind one also of some geraniaceous plant. I know of no flower of *Cardamine* that can be compared to this in size or in colour: the nearest, in both those particulars, and somewhat in foliage and habit, is a new species in my Herbarium, first found by Professor Jameson on the Cordillera of Pillaro, (El Equador,) at an elevation of 15000 feet above the level of the sea, in moist situations, and the same was found by M. Goudot at Enchilla de la Divitodera, on Tolima of New Granada.* Another remarkable feature in this species is its remarkably leafy raceme; there are true pinnated or pinnatisected leaves to the summit. So that in some long racemes, fully a foot in length, the flowers and fruit (when the pedicels are much elongated) may be said to be solitary and axillary. No such character is observed in C. *Jamesoni*.

Descr.—*Radix* mihi non visa. *Caulis* alatus, glaber, crassitie *pennæ anserinæ*, subangulatus, flexuosus; etiam subscandens, 1 ad 3-pedalis, ramosus: ramis nunc pedalibus. *Folia* omnia pinnatisecta, petiolata; *foliolis* 7-11, petiolu-

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* This species may be thus characterized:

Cardamine *Jamesoni*; glabra, caule flexuoso, foliis pinnatisectis, foliolis 3-7 petiolulatis ovatis v. ovato-lanceolatis obtusis subincisis crenato-serratis basi obliquis serraturis mucronulatis, corymbo terminali, floribus speciosis purpureis, sepalis lato-ovalibus apice purpureis, petalis lato-obovatis venosis stylo crasso longioribus calycem duplo superantibus, siliqua lineari-compressa stylo longiusculo subæque crasso terminata.

Hab. Cordillera of Pilaro, alt. 1500 feet; *Prof. W. Jameson*. On Tolima, New Granada; *M. Goudot*.

latis, *foliorum inferiorum* late-ovatis, acutis basi obliquis et hinc auriculatis, utrinque glabris, margine nunc subciliatis, incisis, grosse serrato-dentatis, dentibus mucronulatis; *petiolulis* latiusculis semiunciam ad unciam longis, apice dilatatis; *foliorum superiorum foliolis* minoribus, angustioribus, basi magis æqualibus. *Racemus* elongatus, foliosus. *Pedicelli* graciles, fructiferi elongati. *Flores* speciosi. *Calycis* atro-sanguinei *foliolis* subæqualibus, lato-ovatis, obtusissimis. *Petala* calyce duplo longiora, siccitate erecto-patentia, late obovato-spathulata, purpurea, venis saturatioribus pulcherrime picta. *Stamina* 6, libera, inclusa, subæqualia: *anthera* oblonga. *Ovarium* lineari-cylindricum; *stylus* longus gracillimus fere acicularis, exsertus. *Siliqua* longe pedicellata, sessilis, lineari-compressa, 2-2½ uncias longa, stylo gracili persistente terminata. *Stigma* vix dilatatum, bilobum. *Semina* uniserialia, obovata, compressa, punctulata. *Podospermum* longitudine seminis, gracile. *Cotyledones* obovatæ, oblique accumbentes.

TAB. XII. *Fig.* 1. Petal; *f.* 2. stamens and pistil; *f.* 3. fruit, (*nat. size*); *f.* 4. portion of a valve of the fruit; *f.* 5. seed and seed-stalk; *f.* 6. 7. cotyledons from scarcely mature seed:—all, except *f.* 3. more or less *magnified.*

Sur la nouvelle famille des COCHLOSPERMÉES; *par* J. E. PLANCHON, *Docteur-ès-Sciences.*

Les deux genres que je réunis sous ce nom doivent leur séparation forcée aux méprises de botanistes justement celèbres. Linné, comme on sait, fit du *Cochlospermum* de l'Inde une espèce de *Bombax.* Son erreur fût religieusement transmise par ses disciples au temps où Kunth rendit à la plante méconnue le droit de représenter un genre, et la liberté de chercher hors des Malvacées une union plus conforme à sa nature. Dégagée d'une première entrave, une autre l'attendait presque au début. En effet le Prodrome

de De Candolle présente dans une section des Ternstrœmiacées, l'assemblage du *Laplacea*, (qui suivant les idées de l'auteur aurait dû entrer dans sa famille des Camelliées) du *Ventenatia** (véritable Bixinée), et de ce même *Cochlospermum* qu'on va suivre dans une troisième migration. Cette fois, c'est parmi ses Cistacées que M. Lindley lui donne asile ; mais sans remplir à cette occasion les formalités d'usage, puisque pas un des traits du nouveau venu n'entre dans le

* M. Hooker fils aura occasion, dans sa Flore du Niger, de montrer combien sont fautives la description et l'analyse de l'ovaire de cette plante publiées dans la Flore d'Oware, (vol. 1. p. 29. tab. 17.) Je me borne à établir sur ce sujet quelques curieux points de synonymie. On sait que Loureiro introduisit dans sa Flore de Cochinchine quelques plantes de la côte de Mozambique. L'une d'elles décrite sous le nom d'*Heptaca*, (Fl. Cocinch. p. 657. ann. 1790), est évidemment le même genre que le *Ventenatia*. Mais l'*Heptaca* se trouvant, dans le genera d'Endlicher, (p. 1332), relégué parmi les genres dont la place est inconnue, et indiqué par inadvertance comme natif de la Cochinchine, il a reparu sur la scène sous un troisième nom, (*Xylotheca*, Hochstet. in Flora S. B. Zeit. ann. 1843. p. 69) ; et, cette fois, il a pris sa vraie place parmi les *Bixinées*. Personne, cependant, n'a songé que ces trois genres, ou plutôt ce même genre sous trois noms et dans trois places, pouvaient bien céder le droit d'ancienneté à l'*Oncoba* de Forskäl. Jussieu seul (à qui je rends volontier le mérite de l'idée, content de l'avoir confirmée sans la connaître), Jussieu soupçonna de bonne heure l'affinité, si non l'identité générique de la plante de Forskäl et de celle de Loureiro.*

Il peut sembler téméraire de trancher la question dans le dernier sens ; puisque l'*Oncoba* a des rameaux armés d'épines, et, suivant Forskäl, un calice à quatres lobes persistants, et des fleurs supposées toutes hermaphrodites : tandis que l'*Heptaca* possède, d'après Loureiro et M. Hochstetter, des fleurs polygames, un calice de trois pièces caduques et des rameaux inermes. Mais ce nombre des pièces calicinales est il en réalité constant, lorsque celui des pétales peut varier de quatre à dix ? Quant à la polygamie des fleurs, rien n'est plus trompeur qu'un tel caractère ; et si l'on jette un coup d'œil sur la figure de l'*Oncoba spinosa* publiée dans la Flore de Sénégambie, (tab. 10), on verra que ses deux fleurs épanouies n'offrent aucune trace d'ovaire. D'après ces motifs, il me paraît urgent de réunir en un seul quatre genres qui errent dans nos livres, avec la réserve d'une section spéciale pour l'espèce type. J'établis en conséquence l'énumération suivante : [ONCOBA

* Voy. Ann. du Mus. vol. 11. p. 234, et Mém. du Mus. v. 5. p. 245.

tableau général du groupe. Pour y reconnaître sa présence, il faut oublier ses caractères, et ne remarquer que son nom.

Tandis que le *Cochlospernum* errait parmi les familles

Oncoba, Forsk. descript. Pl. Æg. Arab. p. 103.—Ach. Rich. et Perrot. Flor. Sénég. p. 32.

Sect. I. Evoncoba.—*Lundia.* Thonn. et Schum. descrip. Pl Guin. p. 231.

Flores omnes hermaphroditi ? ? Calyx 4-partitus, (Forsk.—Thonn. et Schum.) 5-partitus, (Ach. Rich), laciniis reflexis persistentibus. Petala 4 v. plura. Spinæ sub foliis solitariæ v. geminatæ.

Sp. 1. Oncoba *spinosa,* Forsk. l. c.—O. *spinosa ?* Ach Rich. l. c. tab. 10. —*Lundia monacantha ?* Thonn. et Schum. l. c.

Crescit in Arabiæ felicis prov. Yemen, prope *Hadje,* Lat. bor. circ. 15°.—*Forsk.,*—nec non in Senegambia, secus ripas fluminis Casamanciæ et in Guinea, prope *Sielden,* si synonyma huc recte referta.

Obs.—Quoique la description de Thonning et Schumacher semble à certains égards concilier les différences entre celle de Forskäl et celle de M. Ach. Richard, on peut néanmoins conserver de justes doutes sur l'identité de leurs plantes avec l'espèce d'Arabie.

Sect. II. Heptaca.—*Heptaca,* Lour. Fl. Cochin. p. 657, (descript. ovarii et fruct. erronea.)—*Ventenatia,* Pal. Beauv. fl. d'Ow. 1. p. 29, tab. 17, (adumbratione struct. internæ ovarii plane erronea). — *Xylotheca,* Hochst. in Flora s. bot. Zeit. ann. 1843, p. 69.

Flores polygami, hermaphroditi et masculi in planta diversa. Calyx 3-partitus, caducus. Petala 9-10. Ovarium (ut in sect. prima) 1-loculare, placentis 3, parietalibus. Rami inermes.

Sp. 2. O. (heptaca) *Africana—Heptaca Africana,* Lour l. c.—O. foliis ovatis, integerrimis, glabris; pedunculis lateralibus, plurifloris; floribus albis.

Arbor parva, ramis expansis. Folia venosa. Bacca viridis, diametro bipollicari, *Lour.*

Crescit in sylvis Africæ orientalis. *Loureiro ;* nempè in ore Mozambico, Lat. aust. 15°, ubi auctor e Cochinchina redux spatio temporis brevi moratus est.

3. O. (Heptaca) *Kraussiana—Xylotheca Kraussiana,* Hochst. l. c.—O. foliis obovato-oblongis, obtusis v. subacutis, glabris, margine ciliatis; floribus in ramulis axillaribus 1-3, flavis, diametro bipollicari.

Crescit in sylvis coloniæ Natalensis, prope Umlaas River; *Krauss,* No. 352, in herb. Hook.

4. O. (Heptaca) *glauca,* J. D. H. Fl. Nig. ined. — *Ventenatia glauca,*

hypogynes, la seule plante qu'on puisse lui joindre, prit un premier pied chez les Rosacées. Je veux parler de l'*Amoreuxia* dont la figure a paru dans ce Journal (Tab. I.), et qui fût décrite par De Candolle d'après un dessin de la Flore Mexicaine de MM. Mocino et Sessé, et sur des échantillons (sans doute imparfaits) de l'herbier Lambert. La place qu'elle occupe dans le Prodrome explique assez comment elle a pu reparaître sous le nouveau nom d'*Euryanthe*. Aussi sans faire à Chamisso et Schlechtendal un reproche de ce double emploi, il faut leur savoir gré de l'heureuse idée qu'ils eurent, en plaçant leur genre entre les *Geranium* et les Malvacées. Meisner, dans son beau *Genera* (p. 41), lui conserve d'abord la même place ; mais, plus loin (p. 345), décidé par Endlicher, il le transporte au bout des Ternstrœmiacées. Comme, dans le même ouvrage, le *Cochlospermum* est à la tête de ce groupe, on y trouve, ainsi que dans le *Genera* d'Endlicher, deux genres étroitement alliés placés aux limites extrêmes d'une famille qui leur est étrangère. Le *Cochlospermum* et l'*Amoreuxia*, (sous le nom d'*Euryanthe*) se sont rapprochés sans se confronter ; et l'on peut attribuer leur rencontre à la circonstance qui les a égarés l'un et l'autre loin de leur vraie place. Leurs rapports, du reste, ne sont pas de ceux qu'il est nécessaire de prouver. Ils vont ressortir d'eux-mêmes d'une esquisse de leurs traits communs.

Les *Cochlospermum* sont des plantes vivaces et frutescentes, qui présentent toutes les proportions intermédiaires entre l'arbuste nain des *Campos* et l'arbre moyen des Forêts. Cependant, sous ce dernier état, leur présence paraît princi-

Pal. Beauv. l. c.—C. foliis ellipticis, apice acuminato-caudatis, glabris, supra ex sicco pallide olivaceis, subtus dilute castaneis ; floribus roseis axillaribus v. interdum (ex icone Beauvoisii) in racemum terminalem digestis.

Facies plantæ plane Bixaceus. Petioli graciles, teretes versus apicem sensim curvati. (Pedicelli fructiferi ex axilles foliorum superiorum solitarie ex serti. *Vogel.*)

Crescit in regione elevata, aperta, sylvis destituta prope *Agathon* regni Beninensis. *Pal. Beauv.* ; nec non in insula *Fernando Pô*, secus oram Africæ tropicæ occidentalis. *Vogel*, in herb. Hook.

palement liée aux bois des Tropiques que la sècheresse prive de leur feuillage, et non à ces forêts des mêmes régions où la végétation est toujours active. Au premier retour des pluies* les rameaux dénudés† des *Cochlospermum* se parent de grandes fleurs jaunes, et presque aussitôt, de leurs feuilles éparses qui rappellent, suivant les espèces, celles des Platanes, des *Pavia* ou des *Bombax*. Les tiges naines d'une curieuse espèce (le *Cochlosp. tinctorium* de Sénégambie) s'élèvent d'une masse tubéreuse dont la nature organographique est peu connue. On peut s'attendre à trouver cet organe dans tout le genre, puisqu'il existe à un degré assez remarquable chez l'*Amoreuxia Schiedeana*. Ici, c'est un tubercule oblong, de consistance ligneuse, couvert d'une écorce rugueuse et crevassée, d'où s'élève une tige courte, à peine ligneuse à la base, et dont les feuilles précèdent, plutôt qu'elles n'accompagnent l'évolution de l'inflorescence. La plante, est par rapport aux Cochlospermes, ce que les Malvacées monocarpiennes sont aux Bombax; ou, si l'on veut, par leur végétation et leurs feuilles autant que par le duvet de leurs graines, les Cochlospermes rappellent exactement les *Bombax*; l'*Amoreuxia* avec l'aspect des Geraniées et des Mauves, possède dans ses graines glabres et lisses un trait de plus en commun avec ces genres.

Ce qu'on sait des propriétés des Cochlospermées laisse dans le vague la nature de leurs secretions. Le tubercule souterrain d'une espèce (*C. tinctorium*), les graines à demi formées d'une autre (*C. Gossypinum*) fournissent un couleur jaune. Des tiges de cette dernière espèce, exsude une matière qu'on récolte dans les provinces du nord-ouest de l'Inde sous le nom de Gomme *Kuteera*‡ comme succédanée de la gomme Adragant. La racine du *C. insigne* fournit aux colons de l'intérieur du Brésil un remède contre les douleurs internes, surtout les abcès qui sont le résultat de chûtes.* Dans tous ces cas, l'eau servant de véhicule au principe colorant ou médicamenteux, il paraîtrait que la matière gommeuse forme la base de ces secrétions. Et pourtant, la présence même de particules colorées, l'astringence que l'action des sucs semble supposer, et un je ne sais quoi dans l'aspect du bois de ces plantes, me portent à croire qu'il y a là comme chez les Géraniacées,† une portion de résine unie à la gomme, au lieu du mucilage dont la présence, chez les Malvacées, est peut-être un caractère sans exception. Ainsi, la nature présumable des secrétions, les ressemblances d'aspect, comme les tubérosités‡ souterraines, trahissent chez les Cochlospermées cette nature *Geranioïde* que Chamisso et Schlechtendal saisirent si bien dans leur genre *Euryanthe* (*Amoreuxia.*)

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* Et quelquefois même à la simple approche de cette période de l'année tropicale. On peut consulter avec intérêt sur ce remarquable phenomène.—Humb. relat. hist. II. p. 33. et p. 45.—A. St. Hil. voy. Brés II. p. 100-101 et passim.—Mart. Phys. der Pflanz. in Bras. p. 16-17 et passim.

† Une espèce de l'Afrique occidentale à laquelle le Docteur J. D. Hooker m'a fait l'honneur d'attacher mon nom, possède, au contraire de ses congénères, des fleurs en bouton sur des branches couvertes de feuilles adultes.

‡ Royle, cité par Lindley, Veget. Kingd. p. 350.

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* A. S. Hil. pl. us. bras. n. 57.

† Ce que je rappelle des sucs des Geraniacées s'appuie en particulier sur un curieux fait consigné par Sir W. Hooker, dans un petit ouvrage qui s'adresse moins aux botanistes qu'à la masse du public. (*Account of a Voyage to the S. W. coast of Africa*, &c , by T. E. Eden.) On sait que la recherche de l'engrais naturel nommé *guano*, a porté quelques vaisseaux sur la côte Occidentale de l'Afrique, entre les 28ème et 22ème degrès de latitude australe. Parmi les maigres productions de cette plage, se trouvent des tiges aphylles, cylindriques, étranglées de distance en distance, et dont l'écorce fragile couvre au lieu d'un tissu ligneux une masse compacte de gomme résine, d'aspect et probablement de nature succinique. La plante qui s'embaume ainsi de son propre suc, végète dans les serres de Kew, et quoiqu'elle n'ait pas encore dévoilé son vrai nom, j'ai tout lieu de croire, après M. Zeyher et Sir W. Hooker, qu'elle est, si non identique avec le *Monsonia Burmanni*, DC., du moins congénère de cette espèce. D'ailleurs, M. Lindley (Veg. Kingd. p. 494). résumant ce qu'on sait des secrétions résineuses des Geraniacées, cite le *Monsonia spinosa* dont les tiges (sèches ?) brûlent comme un torche.

‡ Je n'ose rien décider sur le siège de ce remarquable renflement. L'observation suivie des développements de la plante peut seul nous l'apprendre. D'ailleurs je suis loin d'insister sur ce caractère comme une preuve d'affinité entre des plantes qui ne sont pas unies par d'autres points. On sait que dans les genres les plus naturels, les excroissances de cette nature donnent tout au plus des caractères spécifiques.

Des mots vagues tels que tendance, nature, suivis d'une épithète en *oïde*, peignent souvent l'état réel de nos idées sur les limites des familles et surtout des classes naturelles. Nature *Geranioïde* suppose une classe de ce nom, et cette classe reste encore à définir. On peut croire, qu'avec un de mes maîtres, je comprends sous ce nom, outre les vraies Géraniées, les Tropœolées (auxquelles M. Lindley réunit avec raison les Limnanthées), les *Impatiens*, les Oxalis et les *Linum*. Mais je suivrais bien peu les leçons et l'exemple de ce maître qui eut pour les siens Richard et Jussieu, en sacrifiant à une déférence aveugle ce que je crois être l'intérêt de la vérité. Sans nier les rapports de ces plantes, j'y vois des analogies de structure dignes de l'attention du Morphologiste, plutôt que des signes d'une affinité réelle. Des alliances de cette sorte sont toujours provisoires; elles durent tant que les genres rapprochés sont peu nombreux ou considérés trop isolés des autres groupes; mais dès qu'on peut assigner à chacun d'eux une place séparée, on se hâte de rendre à leurs analogies le nom de *parallélisme de structure*, pour celui de *liens de connexion*. Est-il possible, en effet, de placer les Oxalidées* dans une autre classe que les Légumineuses, sans perdre de vue les rapports les plus frappants et les mieux avoués? Les *Connarus* sont à peine distincts des Légumineuses, et d'ailleurs inséparables des Oxalis. Une section de ce dernier genre a les feuilles pinnées et irritables des Mimeuses; une autre les phyllodes des Acacias; une troisième est justement nommée hedysaroïde; quelques espèces ont les feuilles des Lupins, comme les nôtres celles du Trèfle. Ainsi, sans pousser aux Zygophyllées une comparaison aussi facile, je considère ces trois familles (Oxalidées, Zygophyllées et Légumineuses), avec l'addition du *Moringa*, comme membres d'une classe homonogène, une et indivisible, et, dans l'état présent de nos collections, à peine sujette à s'enrichir sans se dénaturer.* Sur les frontières de cette vaste province, je voudrais (dans l'état présent de mes connaissances) placer du côté des Zygophyllées, le curieux et anomal *Biebersteinia*, les Mélianthées, famille qui serait représentée par un seul genre si je n'y réservais quelques additions aussi remarquables qu'inattendues, les Cochlospermées, les Géraniées, et les genres qui se groupent autour du *Viviania*.

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* J'aurai occasion, plus tard, d'établir sur des faits la réunion des Connaracées et des Oxalidées, comme deux sections naturelles d'une même famille.

Une certaine ressemblance d'aspect causée surtout par la nature très particulière de *l'indumentum* des feuilles, ou, à défaut, par leur teinte d'un vert glauque et livide et leurs dents profondes inégales et glanduleuses, auraient pu faire comparer ces plantes non seulement entr'elles, mais aussi avec le *Trigonia*. Ajoutons à ces traits l'asymétrie des fleurs manifestée par l'inégal développement des étamines, ou leur avortement complet sur un côté de la fleur (par exemple, chez l'*Amoreuxia*, le *Melianthus*, le *Trigonia*) ; un style simple, courbé, à pointe également indivise, terminant un ovaire à loges (souvent incomplètes) polyspermes ; la campulitropie des graines ou leur tendance vers cet état ; des capsules dont le mince péricarpe se divise fréquemment en deux lames superposées ; tant de points me paraissent établir l'affinité de ces genres, et leurs tendances communes vers les Sapindacées polyspermes (*Æsculus*, *Ungnadia*, *Kölreuteria*, *Erythrophila*, *Cossignia*) ; vers les Chailliétiacées par le *Tapura*, vers les Cistes par le *Ledocarpon*, enfin par le *Viviania* vers les Hermanniées, ce qui nous ramène à la première place des Cochlospermes entre les Malvacées et les *Geranium*.

Tout en regardent comme contraire à la nature l'alliance immédiate des genres *Oncoba* (*Ventenatia*) et *Cochlospermum*, je suis loin de méconnaître leur affinité directe. Inséparable du *Bixa*, l'*Oncoba* doit partager les tendances de ce genre vers les Cochlospermes. Un calice formé de pièces concaves et remarquablement embriquées, des pétales à estivation contournée, une capsule uniloculaire à endocarpe mince et fragile, un principe colorant répandu dans tous les organes, des cryptes punctiformes ou alongés pleins d'une résine fluide, semés dans le tissu du calice ou des pétales, tous ces caractères des Cochlospermes sont reproduits dans le *Bixa*. D'autre part, à titre de Ternstrœmiacée, le *Laplacea* doit se rapprocher des *Saurauya*, plantes que l'ensemble de leur structure rattache aux Dilleniées, aux Ericinées par le *Clethra* et les Pyroles, aux *Sarracenia*, j'ose ajouter au *Bixa*, et par ce dernier, aux Cochlospermes.*

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* L'article qui suivra celui-ci, sera spécialement consacré à des détails sur la famille des Linées. Quant au *Tropæolum* je crois n'adopter qu'une idée devenue courante dans la science, en le comprenant dans la même classe que les Sapindacées.

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* Ces rapports que j'indique, sont, à l'exception des deux derniers, discutés avec détail dans un article récemment publié dans ce Journal, (vol. 5. p. 250 et seq.) Je ne reprends ce sujet que pour exprimer sur une heureuse idée de M. Lindley, un assentiment complet, au lieu d'une demi-conviction. J'avais reconnu les rapports des *Saurauya* et des Dilleniées, M. Lindley a fait mieux encore en effectuant leur réunion. Ajoutons que le tact du Docteur Wallich, avait de bonne heure, confié la même idée à une note manuscrite. Une des plantes (n. 6634) de la magnifique collection de la compagnie Anglaise des Indes porte les mots *Dilleniacearum ordinis?* et c'est elle qui a servi de type à l'*Actinidia* de M. Lindley, genre aussi inséparable des *Saurauya*, que ces dernièrs le sont des Dilléniées. Dans l'*Actinidia callosa*, suivant une admirable figure dont je dois la communication au docteur Falconer, le pédicelle fructifère, remarquablement renflé vers son sommet offre un étranglement brusque au point d'insertion de la fleur. Le même caractère et l'articulation du calice sur le pédicelle se présentent à divers degrés dans les Dilléniées et les Saurauya; on peut voir quelque chose d'analogue chez le *Bixa*, où les pièces qu'on est convenu de nommer *sépales* (pétales extérieurs, suivant Linné) s'articulent entre cinq tubercules saillants, analogues par leur nature et la place qu'ils occupent, aux glandes calycinales des Malpighiées. Cette première coïncidence dans les calices la tendance des styles de l'*Oncoba* à se diviser en lobes radiés, les anthères à loges distinctes vers le sommet et ouvertes par de courtes fissures; les graines enduites d'une couche pulpeuse, tous ces points me paraissent établir entre les Dilleniacées et les Bixinées une affinité dont on puisira de nouvelles preuves dans les ressemblances des Delimées avec les *Banara* et les *Trilix*. Qu'on rapproche surtout sous ce rapport les *Actinidia* et le *Thiodia*, Sw.

Je ne puis terminer cette note sans exprimer mon regret qu'un genre aussi bien illustré que doit l'être le *Trochostigma* de MM. Siebold et Zuccarini (Abhand. der Münich. Akad. 2. Class. III. p. 726, ex End-

La collection de Sir W. Hooker renferme assez d'additions intéressantes au nombre et aux localités des espèces de Cochlospermées, pour m'engager dans le travail ingrat d'une revue monographique. Un résumé de quelques lignes peut en épargner les détails au lecteur.

J'ai dit plus haut, d'après les voyageurs et les herbiers, comment les *Cochlospermes* éprouvent sous l'influence d'un ciel ardent, le même arrêt de végétation que l'hiver amène aux arbres de notre zône. Ce remarquable phénomène, lié, moins à la température qu'à l'état hygrométrique de l'atmosphère, se présente partout où se trouvent combinées les causes qui le produisent. Dans les *Campos* et les *Catingas* de l'intérieur du Brésil; sur quelques points des côtes de la Nouvelle Grenade; dans la région la plus chaude du Mexique; au Nord-Ouest de l'Australie; sur la côte de Coromandel, où les *Stapelia* et les Euphorbes grasses ont leurs représentants; dans le Sénégal où la végétation se ressent du voisinage du Désert; partout où le soleil laisse à la zône dont il s'éloigne l'ardeur de ses rayons sans le tribut de ses pluies, certains arbres suspendent des fonctions que le sol refuse d'entretenir: mais, ici, comme dans nos climats, la feuille qui se détache a fait provision de nourriture pour celle qui doit la suivre; et, sans donner

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licher, Gen. Supp. III. p. 94), soit destiné à céder le pas à l'*Actinidia*, genre indiqué par une courte phrase, à la fin d'un livre où les botanistes systématiques s'avisent peu de chercher des descriptions. Tel étant le cas pourtant, et M. Lindley me laissant la tache de faire valoir les droits de priorité de son genre, je dois appliquer le nom d'*Actinidia* à l'espèce nouvelle qui m'a fourni ces observations: Elle peut-être caractérisée comme il suit:

Actinidia *Chinensis:* foliis longe petiolatis, suborbiculatis, transverse latioribus, apice truncato retusis, margine obsoletissime repando, dentes minutos, tuberculiformes exserentibus, supra glabris, subtus adpresse cano tomentosis, reticulo nervorum subtus prominente; pedicellis pollicaribus, in ramulis lateralibus foliis coronatis sparsis; stigmatibus circ. 15, lineari-spathulatis.

Folia 1½ poll. longa, 2 poll. lata; petiolo eisdem subæquilongo flexuoso, sustensa.

Hab. in China. *Fortune*, n. 39.

à ses jeunes pousses des enveloppes qui marqueraient un long repos, la plante n'attend pas même le retour des pluies, pour offrir le brillant contraste de ses fleurs sur des rameaux privés de verdure. Ces phases de la végétation des Cochlospermes doivent influer puissamment sur leur distribution entre les Tropiques. Leur station est déterminée par leurs habitudes; leur habitation doit l'être par des causes plus complexes, mais subordonnées à cette condition première d'où leur existence paraît dépendre. C'est elle qui les exclut des forêts humides; mais, sans les rattacher d'une manière constante aux savannes de tous les pays chauds; puisqu'il existe, au contraire, une disproportion remarquable entre l'aire qui mesure l'extension du genre et l'isolement des espèces qui le représentent dans une région donnée. De *neuf* espèces connues, *une* seule (*C. hibiscoides*) paraît s'étendre depuis le Mexique jusqu'à *Guayaquil* (et peut-être plus loin vers le Sud); on la retrouve à *Sta. Martha* et sur plusieurs points de la même côte de la Colombie; peut-être même faut-il la suivre dans la province Brésilienne de Pernambouc, c'est à dire aux limites septentrionales d'une espèce exclusivement Brésilienne (*C. insigne*). Celle-ci, répandue dans la partie de la province des Mines que traverse le *Rio San Francisco*, se retrouve dans les *Catingas* de la province de Bahia. *Trois* espèces, unies par le port et les caractères en un sous-genre très distinct, habitent la Guyane et la région de l'Orénoque. Le genre n'a pas de représentant dans les Antilles. Ainsi *cinq* Cochlospermes se succèdent du nord au sud sur la vaste surface du continent Américain, entre les Tropiques; *quatre* seulement complètent le cercle d'extension du genre dans le sens des longitudes. Le *C. Gossypium* paraît confiné dans la péninsule de l'Inde; l'Ile Melville au Nord-Ouest de l'Australie possède notre *C. Fraseri;* enfin le *C. tinctorium* et un autre des bords du Niger, complètent une série d'espèce tellement limitée, qu'il serait superflu de présenter sous forme de table, leurs proportions numériques, en rapport avec les régions qui se les partagent.

Ajoutons pour conclure cette partie de notre travail que l'unique représentant certain du second genre de Cochlospermées, l'*Amoreuxia Schiedeana*, habite à la fois le Mexique, et la région de la Colombie que traverse le Rio *Magdalena.*

Les détails techniques qui vont suivre, sont destinés surtout à servir de pièces justificatives à nos considérations générales.

Revue Monographique des COCHLOSPERMÉES.

COCHLOSPERMEÆ.—Gen. TERNSTRŒMIACEARUM v. ROSACEARUM v. GERANIEIS affinia auct.

Flores hermaphroditi, pentapetali, symetrici v. rarius staminum inæquali evolutione asymetrici. Calycis æstivatio quincunciatim imbricativa; petalorum fugacium convolutiva. Stamina hypogyna, indefinita. Filamenta filiformia apice acutata, basi interdum inter se subconnexa. Antheræ basifixæ, lineares, plus minus incurvæ, 2-4-loculares, poris 2-apicalibus, sæpius in unum confluentibus, v. rimulis 2 anticis, subapicalibus apertæ. Ovarium 3-5-loculare, septis versus medium incompletis, margine utroque placentiferis; rarius ad axim ovarii inter se connexis, loculis in angulo interno ovuliferis. Ovula indefinita, funiculis crassiusculis sustensa, amphitropa. Stylus simplex filiformis, incurvus, fistulosus, ore minute denticulato apertus. Capsula loculicide 3-5 valvis, endocarpio fragili papyraceo fragili, in laminas totidem epicarpii valvis alternantes sæpius rupto. Semina reniformia, lana bombycina tecta v. calva. Embryo in albumine carnoso, semini conformis, incurvus. Cotyledones, planæ, integræ, sibi invicem incumbentes.

Arbores v. frutices humiles, imò herbæ tubere subterraneo perennantes, per regiones tropicas totius orbis numero specierum parcissimo dispersæ. Folia alterna, palmatifida v. partita, rarius digitata. Stipulæ laterales, longe lineares

v. minutæ, caducæ. Racemi terminales, axillares v. gemmæ foliatæ axillaris evolutione oppositifolii, interdum furcato-geminati v. flexuose subdivisi, rarius regulariter secundiflori; florum evolutione indefinita. Pedicelli basi articulati. Flores speciosi, flavi, sæpius præcoces. Radix, caules, imò semina immatura succo (gummi-resinoso?) colorem luteum præbente scatentes. Petala cryptis, materie oleoso-resinosa repletis punctato-literata.

GEN. I. AMOREUXIA. Moc. et Sesse—vide supra p. 140.

Sp. 1. Amoreuxia *Schiedeana*, Nob. l. c.—Sola certe nota, Mexicana et Novo-Granatensis.

2. A. *Mexicana*, Moc. et Sesse.—Mexicana—Forsan forma præcedentis depauperata.

GEN. II. COCHLOSPERMUM, Kunth. Malv. p. 69, in annot. —Aug. St. Hil. pl. us. Bras. tab. 57; Endlich. gen. n. 1018.—*Wittelsbachia*, Mart. et Zucc. nov. gen. et sp. 1. p. 80. et sequ. tab. 55.—*Bombacis*, sp. L.

Character fere totus ordinis. Flores symetrici. Dissepimenta ovarii plus minus incompleta, juxta v. versus marginem placentifera. Semina lanata.

Subgen. I. EUCOCHLOSPERMUM.

Calycis laciniæ ovato-subrotundæ, æstivatione valde imbricatæ. Stamina libera. Antheræ 4-loculares, poro unico apicali apertæ. Semina reniformia. Arbores v. frutices humiles, campos apertos, aridos, v. sylvas deciduas amantes; inflorescentiæ præcoces, sæpius e racemis flexuoso subdivisis, terminalibus, constantes. Folia palmatifida.

Sp. 1. C. *Gossypium*, DC. prod. 1. p. 527.—Wight et Arn. prod. fl. pen. Ind. Or. 1. p. 87.—*Bombax Gossypium*, L. syst. 517.—Roxb. fl. Ind. 2. p. 169.—C. foliis 5-lobis, subtus lana adpressa candicantibus; lobis integerrimis acuminatis.

Hab. Secus oram Coromandeliæ, in montibus *Circars* dictis. *Roxb.*; nec non ad *Travancore*. *Wight*.

Obs. Les localités que je cite pour cette espèce sont les seules que je puisse considérer comme authentiques. Il faudrait se garder de prendre pour telles celles que donnent d'anciens auteurs disposés d'ordinaire à entasser des synonymes plus ou moins faux plutôt qu'à donner la description exacte de leurs plantes. Celle-ci figure dans le *Flora Zeylanica* de Linné sous le nom de *Xylon*, (p. 99. n. 222.) Elle peut être cultivée à Ceylon, comme dans mille autres endroits de l'Inde. Mais la collection de Sir W. Hooker si riche en plantes de cette île, ne renferme aucun échantillon sauvage du C. *Gossypium*.

2. C. *Fraseri*, nov. sp.—C. floribus corymbosis; pedicellis ramisque inflorescentiæ velutino-pubescentibus; staminibus calyce subbrevioribus; antheris pro genere parvis, vix ultra lin. longis, in parte inferiore dorsi linea impressa sulcatis.

Rami florentes foliis destituti, teretes, crebre flexuosi, cortice lævi, rubescente, glabro, nitido vestiti. Corymbi terminalis rami terni, circ. 3 poll. longi, inferne glabrati, mox bifurci, cruribus densiuscule velutinis. Pedicelli vix 1-poll. longi.

Flores eis *Cochlosp. Gossypii* minores, diametro plus quam bipollicari. Calicis laciniæ ovatæ, obtusæ, utrinque pulverulento-pubentes, subanthesi reflexo-patentes. Petala in specimine semi-destructa, ut videtur, apice obliqua emarginata, siccitate flava in aurantium colorem vergentia. Antheræ filamentis tenuissimis subtriplo longiores, lineari-oblongæ, leviter arcuatæ, sulco dorsali ex eorum basi ad medium producto. Capsula generis obovoidea.

Hab. In insula Melville secus oram boreali-occidentalem Novæ Hollandiæ. *Fraser* in herb. Hook.

Obs. Ce qui manque pour rendre cette description complète est en réalité de peu d'importance, du moment qu'on a constaté l'existence d'une espèce de *Cochlospermum* propre à la végétation tropicale de l'Australie. Ce fait tire une grande part de son intérêt de ce que l'espèce Asiatique de ce genre paraît confinée dans la Péninsule de l'Inde, et qu'on n'en connaît ni dans les Iles Malayennes, ni dans les Moluques, c'est à dire dans la région botanique dont la flore a le plus d'analogie avec celle de la Nouvelle Hollande tropicale.

3. C. *tinctorium*, Ach. Rich. et Perrot. fl. Seneg. 1. p. 99. tab. 21.

C. tubere subterraneo, crasso; ramis floriferis palmaribus præcocibus, aphyllis, laxe bracteatis, racemose paucifloris; ramis foliatis post deflorationem evolutis; foliis longe petiolatis, 5-lobis.

HAB. In sabulosis sylvaticis regni *Cayor*, juxta *Niaral* et *N'Denout* prov. *N'Boro*, ubi ab incolis vulgo *Fayar* dicitur.

4. C. *insigne*, A. S. Hil. Camb. et Ad. Juss. pl. us. des Bras. n. 57.—*Wittelsbachia insignis*, Mart. et Zucc. nov. gen. et sp. 1. p. 81. tab. 55.—C. foliis coriaceis, 5-lobatis, lobis conduplicatis, grosse arguteque serratis, infimis (adultis) glabriusculis, intermediis subtus, supremis utrinque pubescentibus.

Frutex 2-6 pedalis: floribus plerumque ante folia evolutis. Caulis rectus, subsimplex, cortice fusco-purpurascente, glabro, tenaci, deductili; ligno molli, albido, medulla ampla. Stipulæ caducæ, lineares, integerrimæ, ciliatæ.

HAB. Frequens in campis deserti (*Certao*) prope *Paracatu*, *Riachara*, *Formigas*, nec non in sylvis *Catingas* dictis prope præsidiolum *Quartel de Texeira* in parte prov. *Minas Geraes* quæ dicitur *Minas Novas*.—*A. S. Hil.* In campis deserti inter *Rio das Mortes*, *Rio Jiquitinhonha* et *Rio de S. Francisco*, præsertim in solo calcareo, prope *Contendas*, *Formigas* et *Maldaha*, nec non in sylvis *Catingas* dictis interioris provinciæ *Bahiensis*.—*Mart.* Alia specimina prope *La Victoria*, prov. *Caracasanæ* leg. Humb. secund. Martius—an vere eadem?—In campis aridis elevatis ad *Missionem Duræanam*, prov. *Goyaz*.—*Gardn.* n. 3034 in herb. Hook.

Area spec. inter gradus 17 et 14 latit. australis; altitud. supra Oceanum 1200 ped.—*Martius.*

5. C. *hibiscoides*, H. B. K. nov. gen. et sp. 7. p. 174.—C. *serratifolium?* DC. prod. 9. p. 527.—*Wittelsbachia vitifolia!* Mart. et Zucc. nov. gen. et sp. 1. p. 82. (quoad stirpem Campechianam.)—*Mahurea speciosa*, Choisy in DC. prod. 1. p. 558. (quoad stirpem Stæ. Marthæ) monente A. S. Hil. in pl. us. Bras. n. 57.

HAB. Stirps typica Humboltiana, in littore Mexicano prope *Campeche*, et prope *Vera Cruz*, si specimina in collectione Galeottiana sub n. 864 et 4190 in herb. Hook. huc recte referantur—prope *Actopan* regionis Mexici calidissimæ? *Schiede* ex Cham. et Schlecht. in Linn. 10. p. 251.—Loci natales, stirpibus minus cognitis, dubii: Insula *Taboga* sinus Panamensis, et insula *Puna* prope *Guayaquil*. *Dr. Sinclair* in herb. Hook. et ex Benth. Bot. of the Sulph p. 72.—*Guayaquil* regni Quitensis, vicus *La Victoria* regni Novo-Granatensis, *Humb. et Bonpland* ex Kunth l. c.—Montes humiles prope *Sta. Martha*. *Purdie* in herb. Hook.—Localit. plane dubia: Brasiliæ prov. Pernambucensis. *Gardn.* n. 937 in herb. Hook. Hæc est arbor circiter 12-pedalis, ramis erectis, more affinium florescentiæ tempore foliis orbata.

OBS. Je ne hasarde pas de caractériser cette espèce, quoique je ne conserve presque aucun doute sur son identité avec le synonyme de De Candolle que j'y rapporte. On sent qu'il est difficile, pour ne pas dire impossible, d'identifier ou de distinguer avec certitude des échantillons consistant la plupart de fleurs détachées, de branches sans feuilles, ou de ces dernières sous leurs états extrêmes de développement. Tels étaient les matériaux dont Kunth a dû se servir; tels sont ceux que présentent sans doute les herbiers les plus riches; et sur de telles données, le doute est la plus sure voie d'éviter l'erreur, et d'appeler l'éclaircissement des faits. J'observe, en passant, que pas un des nombreux échantillons que j'ai sous les yeux, pas même ceux du Mexique, ne présentent l'ovaire glabre que Kunth donne à la plante de Campèche.

6. Cochlospermum *Planchoni*, J. D. H. fl. Nig. mss.

Hab. In Campis ad flumen *Niger*. *Vogel* in herb. Hook.

Frutex subarborescens, 6 ped. altus. Petala lutea. Flores 1-2 poll. diam.

Obs. Cette remarquable espèce à laquelle le Docteur J. D. Hooker a désiré attacher mon nom, sera décrite dans la Flore qu'il prépare sur les matériaux de l'expédition récente du Niger.

Subgen. II. Diporandra.

Calycis laciniis oblongæ, parum imbricatæ. Filamenta basi irregulariter subconnata (fide Mart. et Zucc.). Antheræ apice biporosæ. Semina (immatura a Cl. Martius et Zuccarini, in C. *Orinocense* observata) in spiram torta. An character in seminibus perfectis obvium? Arbores Guyanenses et Orinocenses. Folia digitata. Inflorescentiæ axillares, demum foliorum inferiorum lapsu nudatæ; pedunculus basi nudus, mox bifurcus, cruribus secunde et conferte floriferis.

7. C. *Orinocense*, Stend.—*Wittelsbachia Orinocensis*, Mart. et Zucc. nov. gen. et sp. 1. p. 83.—*Bombax Orinocense*, Kunth nov. gen. et sp. 5. p. 234. ex specim. imperfecto.—*Botuto* Indorum Otomacorum.—B. foliolis 5-6, oblongis, acuminatis, integerrimis, membranaceis, glabris.

Arbor 50-pedalis. Foliola basi inæqualia et acuta, reticulato venosa, venis primariis nervoque medio subtus prominentibus, membranacea, glabra, intermedia septem pollicaria et longiora, 2-1½-poll. lata. Capsula pyriformis, subtri pollicaris, trivalvis; valvis interne lineis transversis prominentibus, undulatis, subdædaleis notatæ. *Kunth*.

Semina immatura in spiram torta, sesquigyrosa. *Mart. et Zucc. l. c.*

Hab. Ad ripam Orinoci. *Humb. et Bonpl.*

8. C. *Parkeri*, nov. sp.—C. foliolis 5, oblongis, obtusissimis, basi cuneata longe attenuatis, integris, supra glaberrimis, membranaceis, siccitate nigrescentibus; racemis geminatis,

pedunculo iisdem subæquali folio breviore sustensis; floribus secus rachim compressam secundis.

Arbor? Rami summitas herbacea, medullosa, squamis stipularibus brevibus, tomentosis, in gemmam irregulariter congestis terminata, sparse foliosa, hinc illinc rachides inflorescentiarum denudatas, persistentes, erecto patentes proferens. Petioli supra basim incrassatam graciles, subteretes, tenuissime puberuli, sub-foliolorum insertione in disculum minimum, subtus rufo-puberulum dilatati; inferiores circiter 3 pollicares. Foliolum terminale 2-2½ poll. longum, 10-18 lin. latum, infimis 2 plus quam duplo minoribus. Nervus medius supra acute impressus, subtus crassiusculus, elevatus: laterales tenues, utrinque prominuli, rete nervulorum tenuissimo, non conspicuo intertexti Stipulæ breves, crassæ, caducæ. Inflorescentiæ eis *Oxalidearum hedysaroïdearum* plane conformes; nempe pedunculi stricti, supra bifurci, floribus secundis a basi versus apicem gradatim evolutis.

HAB. In Guyana Anglica. *Cl. Parker* in herb. Hook.

9. C. *parviæfolium*, nov. sp.—C. foliolis 5 sessilibus, oblongis, abrupte acuminatis, acutis, integerrimis, glaberrimis, subvernicoso-lucidis, virentibus; laciniis calycinis late oblongis, obtusis, inter se parum inæqualibus, extus adpresse rufo-tomentellis, staminibus parum brevioribus.

Folia floresque adsunt a caule dissiti. Foliola basi subæquali leviter conduplicata, nervo medio lateralibusque supra impressis, subtus prominulis; textura membranacea; supremum 2½ poll. longum, 1-1½ poll. latum; intermedia infimaque gradatim paulo minora. Pedicelli (saltem pars eorum quæ floribus continua) calice sublongiores, ultra ½-pollicares, apice sensim crassiore subangulati. Petala calice plus quam duplo longiora, sicca aurea.

HAB. In Surinamo. *Dr. Hostmann* in herb. Hook.

DECADES OF FUNGI; *by the* REV. M. J. BERKELEY, M.A. F.L.S.

(*Continued from Page* 6, *Vol. V.*)

DEC. XII.—XIV. OHIO FUNGI.

111. Agaricus (Collybia) *lachnophyllus*, n. sp.; pileo carnosulo conico-hemispherico fulvo-spadiceo velutino; stipite cavo deorsum fusco-purpureo nitido, sursum pallido subvelutino; lamellis liberis fulvo-velutinis.

On rotten pieces of wood amongst dead leaves in woods. Waynesville, Ohio. Sept. 5, 1844. *T. G. Lea, Esq.*

More or less tufted. Pileus ¾ of an inch across, subcarnose, conico-hemispherical, of a rich tawny brown, clothed with short velvety pubescence, much wrinkled when dry.

Stem 2 inches high, 1 line or more thick, tough, hollow, brownish-purple and shining below, shaded off into white above, and clothed with scattered soft pubescence, downy and rather bulbous where it roots into the wood.

Gills narrow, close, quite free, velvety.

An exquisite species, allied apparently to *Agaricus longipes.* The gills, as in that species, are beautifully velvety.

The fungi contained in this and the two following decades were collected in the north-west of Ohio by the late T. G. Lea, Esq. Several new species were published in former decades, discovered in the neighbourhood of his own residence at Cincinnati, and one or two from the same locality are now described. The remainder are from Waynesville, about thirty miles north of Cincinnati, where he went in the autumn of 1844 with the express purpose of collecting Fungi, with what success will be seen by the present interesting species, and by the complete list just transmitted for publication in Silliman's Journal. While eagerly following his favourite pursuit, he was seized at Waynesville by an autumnal fever, which speedily proved fatal.

"Mr. Lea," writes his friend, Mr. W. S. Sullivant, "was a most amiable man, a cautious and accurate observer: had he enjoyed firmer health, and had life been spared him longer, the Botany of this country would have received important aid from his labours. As it was, many new species, particularly in Cryptogamia, owe their discovery to him."

The descriptions of the species now published are drawn up in a great measure from his notes, a circumstance which must add greatly to their value.

112. A. (Flammula) *polychrous*, n. sp.; pileo plano late umbonato multi-colori primum purpureo viscido; disco carnoso; stipite firmo subligneo primum furfuraceo; velo floccoso flavo-purpureo; lamellis pallido-purpureis demum flavo-fuscis adnato-decurrentibus.

On rotten trunks of trees, sticks, &c. Waynesville, Ohio. Sept. 1844. *T. G. Lea, Esq.*

Pileus 2-3 inches across, solitary or tufted, when young convex, purple, soon expanding and flat, with a broad fleshy umbo, very viscid, varying from light yellow to buff, with the umbo brownish yellow or purple.

Stem 1-1½ inch high, 2 lines thick, hard, and somewhat woody, nearly equal, brownish yellow, at first furfuraceous.

Veil fugitive, consisting of purple and yellow flocci.

Gills at first dirty white, then brownish purple, at length yellow brown, broad, rather distant, adnate, slightly decurrent, but easily breaking away from the stem.

Frequently eaten by large larvæ, and then, with the exception of the woody stem, turning into a viscid mass.

This fine species is evidently closely allied to Ag. *Harmoge*, but differs essentially in the nature of the gills. Ag. *sapineus*, another allied species, occurs on fence-rails in the same locality.

113. A. (Crepidotus) *crocophyllus*, n. sp.; pileo sessili subflabelliformi ochraceo-fusco adpresse squamoso; lamellis aurantiis.

On a dead trunk. Waynesville, Ohio. Sept. 5, 1844. *T. G. Lea, Esq.*

Pileus scarce ½ an inch long, flabelliform, convex, ochraceous-brown, clothed with minute adpressed scales. Stem none. Gills rather broad, rounded behind, bright buff. Spores subglobose, of a pale ochre-yellow.

I do not know any species with which this can be compared. *Agaricus croceo-lamellatus*, Let., is, I believe, the same with *Paxillus Panuoides.* The only resemblance, however, is in the colour of the gills. It is perhaps most like Ag. *mollis*, but besides the difference in the colour of the gills, the spores are smaller and of another form. It is not, I believe, resupinate in any stage of growth.

114. A. (Pratella) *fabaceus*, n. sp.; pileo tenui umbonato albo demum plano; stipite glabro fibrilloso basi bulbosa excepta æquali albo, velo amplo extus floccoso; lamellis confertis tenuissimis liberis brunneis.

On the ground amongst dead leaves in open woods. Waynesville, Ohio. Sept. 10, 1844. *T. G. Lea, Esq.*

Pileus 4-5 inches across, thin, almost submembranaceous, umbonate; conical when young, becoming nearly plane as it expands, white, viscid when moist; epidermis smooth, tough, feeling like fine kid leather, turning yellow when bruised.

Stem 3-4 inches high ⅓ of an inch thick, white, smooth, with the exception of a few fibrillæ, equal, except at the base. Veil large at first, covering the gills and connecting the margin with the stem, white, externally floccose.

Gills crowded, very thin, not ventricose, free, brown when young, then darker brown, at length almost black, like the dark part of a bean-flower.

A fine species, allied to Ag. *arvensis*. When young it has a peculiar, but not unpleasant smell.

115. Paxillus *porosus*, n. sp.; pileo excentrico carnoso nitido; stipite lento sursum reticulato; hymenio toto poroso flavo.

In moist woods. Waynesville, Ohio. Aug. 23, 1844. *T. G. Lea, Esq.*

Pileus 2-5 inches broad, ¼-¾ of an inch thick, fleshy, viscid when moist; reddish brown, rather shining; margin thin and even.

Stem lateral, 1 inch or more high, ⅓ of an inch thick, tough, diffused into the pileus, reticulated above by the decurrent hymenium.

Hymenium yellow, porous, formed by radiating thin folds, from a line to ½ a line distant, branching, and connected by numerous irregular veins so as to form large angular pores, the radiating folds being broader than those which connect them. Spores semi-ovate. Smell very strong and unpleasant.

Nearly allied to *Paxillus involutus*, but apparently distinct. The spores are of the same form, but larger than in that species. Without examining the fructification, it might be taken for a *Boletus*.

116. P. *flavidus*, n. sp.; pileo alutaceo-fusco depresso; stipite lento flavo squamulis glutinosis aspero: lamellis parce ramosis postice furcatis, vivide flavis.

On the ground amongst grass in dry open woods. Waynesville, Ohio. Sept. 10. 1844. *T. G. Lea, Esq.*

Pileus 2-4 inches across, depressed, sometimes subinfundibuliform, smooth to the touch, like kid leather, buffish brown, or pale snuff-colour, viscid when moist; flesh rather thin, spongy.

Stem 1-2 inches high, ⅓-½ inch thick, tough, yellow, rough, with glutinous scales. Gills close, thin, slightly branched, connected by veins, decurrent, forked at the base, bright yellow.

Distinguished by its bright yellow, very decurrent gills, which are forked behind, but do not anastomose.

117. Lactarius *calceolus*, n. sp.; pileo tenui centro depresso, margine repando alutaceo-fusco epidermide rimosa; stipite curto concolori; lamellis perpaucis distantibus venoso-connexis decurrentibus albis.

On the ground in woods. Waynesville, Ohio. Aug. 31, Sept. 10, 1844. *T. G. Lea, Esq.*

Pileus 3 inches across, thin, arched so as to present a half-ovate form, brown-buff, smooth, not viscid; epidermis cracked, flesh white.

Stem short, ½ an inch in height and thickness, brown-buff, like the pileus. Gills white, decurrent, ½ an inch broad, extremely distant, more or less connected by transverse veins or plates, forked near the edge, exuding a mild milky juice.

An extremely curious species, remarkable for its few distant gills and the contrast between them and the brown-buff stem. The pilei in all the specimens found at present are laterally confluent. It cannot be confounded with any known species.

118. Marasmius *pyrrhocephalus*, n. sp.; pileo convexo umbilicato striato-plicato rufo; stipite gracili brunneo piloso sursum pallescente; lamellis ventricosis breviter adnatis ex albo alutaceis.

On the ground in damp woods. Waynesville, Ohio. Aug. 23-31, 1844. *T. G. Lea, Esq.*

Pileus 2 lines across, hemispherical, membranaceous, umbilicate, striate, smooth, red-brown.

Stem 1½-2 inches high, slender, brown, closely velvety below, generally rooting, paler above, more or less densely covered with short pale hairs and meal.

Mycelium arachnoid, white.

Gills white, at length pale tan-colored, ventricose, shortly adnate.

Allied to M. *hæmatocephalus*, Mont. Two forms occur, the one smaller and more delicate than the other.

119. M. *clavæformis*, n. sp.; pileo convexo, albo; stipite gracili deorsum attenuato depresso-velutino fusco, sursum albo furfuraceo; lamellis carneo-albis antice latis, postice longe decurrentibus.

On dead sticks. Waynesville, Ohio. Aug. 31, 1844. *T. G. Lea, Esq.*

Pileus 2 lines broad, convex, tough, white.

Stem 1 inch high, attenuated below, attached by a minute bulb, brown, and clothed for ¾ of its height with depressed velvety pubescence, incrassated above where it passes into the pileus, white, sprinkled with furfuraceous particles.

Gills distant, broad in front, very decurrent behind, whitish, inclining to flesh-colour; interstices more or less reticulate.

Allied to M. *insititius.* Remarkable for its very decurrent gills.

120. Lentinus *cæspitosus,* n. sp.; eximie cæspitosus, pileo plano alutaceo, fibrillis brunneis sparsis adpressis ornato, margine incurvo; stipite elongato striato griseo-albo fibrilloso; lamellis integris albis longe decurrentibus.

In woods, on the ground. Waynesville, Ohio. Sept. 8, 1844. *T. G. Lea, Esq.*

Pilei forming tufts of 30 or more individuals, 1½-2 inches across, plane, tough, yellowish-buff, clothed with close-pressed, brownish-red fibrillæ. Margin incurved.

Stems 3 inches high, 2 lines thick, flexuous, tough, striate, greyish-white, fibrillose, formed of fibres.

Gills white, very decurrent and attenuated behind, quite entire.

A very curious species, with the habit of *Agaricus contortus,* Bull. It is easily distinguished from *Lentinus sitaneus* and its allies by its entire gills.

121. Panus *dealbatus,* n. sp.; pileo-coriaceo-molli flabelliformi umbrino striato, stipiteque laterali longiusculo compresso vel canaliculato sursum dilatato, strato albo subtiliter rimoso vestitis; lamellis decurrentibus distinctis umbrinis.

On a dry dead branch. Waynesville, Ohio. Aug. 26, 1844. *T. G. Lea, Esq.*

Pileus ¾ of an inch broad, flabelliform, sometimes lobed, when moist, tough and pliable, umber-brown, striate; when dry white and minutely cracked, as if whitewashed, with a dark border.

Stem ¼ of an inch or more high, dilated upwards, compressed and often canaliculate, perfectly lateral, of the same colour and texture as the pileus.

Gills narrow, umber-brown, distinct, without any veins in the interstices decurrent and clothed below with a white stratum; when dry, brown with a white edge.

Allied to Ag. *farinaceus*, Schum., but at once distinguished by its very decurrent gills. There are few prettier fungi than this when dry. Sometimes the stem is forked, and each division produces a distinct pileus.

122. P. *angustatus*, n. sp.; parvus tenuis pileo spathulato subtiliter pubescente postice angustato farinaceo; strato superiore gelatinoso; stipite brevissimo; lamellis angustis decurrentibus.

On a dead log. Waynesville, Ohio. Sept. 10, 1844. *T. G. Lea, Esq.*

Pileus about 1 inch long, coriaceo-submembranaceous, spathulate or flabelliform, narrowed behind, white, dirty-white, or yellowish, most minutely pubescent; upper stratum gelatinous.

Stem extremely short, being in fact little more than a continuation of the pileus.

Gills very narrow, close, decurrent, white, very minutely pubescent, yellowish when dry.

Somewhat resembling P. *copulatus*. Mr. Lea describes it as tough when fresh.

* Boletus *strobilaceus*, Scop.

The spores in this species are subglobose, or obliquely ovate, and by no means elongated as in other *Boleti*. In the Ohio specimens I find them minutely granulato-echinulate. The tubes, too, do not separate from the pileus. It will probably form some day the type of a new genus.

* Polyporus *radicatus*, Schwein.

Specimens of this occur of various sizes, from that which Schweinitz describes, to 5 inches across, with the stem eight inches or more high and an inch thick.

123. Polyporus (Mesopus) *fissus*, n. sp.; pileo primum infundibuliformi demum fisso, lobis flabelliformibus, tenuissimo luteo-fusco. Stipite deorsum nigro; hymenio albo; poris minimis.

On a decaying stick. Waynesville, Ohio. Sept. 5, 1844. *T. G. Lea, Esq.*

Pileus 1½-2 inches across, at first infundibuliform, at length split once or twice behind, and forming as many flabellate lobes, extremely thin, quite smooth, minutely striate, yellow-brown.

Stem scarce ½ an inch high, very minutely velvety, black below.

Pores white, invisible to the naked eye, punctiform.

Closely allied to Pol. *varius*, but a much more delicate species than any of its allies. The pores are as minute as in Pol. *xanthopus*, so that it was sent as a Thelephora.

124. P. (Pleuropus) *rhipidium*, n. sp.; cæspitoso-imbricatus pileo coriaceo reniformi concentrice sulcato alutaceo-albo cute in areolas furfuraceas secedente; stipite laterali brevi sursum dilatato pruinoso; poris parvis albidis angulatis denticulatis quandoque elongatis.

On rotten trunks, in woods. Waynesville, Ohio. August 21, 1844. *T. G. Lea, Esq.*

Pilei gregarious, cæspitoso-imbricate, coriaceous, ¾ of an inch long and broad, deeply sulcate, yellowish, cracked into minute furfuraceous areolæ.

Stem ¼ of an inch high, lateral, dilated above, pruinose, yellowish when dry.

Pores small, $\frac{1}{100}$ of an inch in diameter, dirty white, angular, often elongated; edge of dissepiments toothed and uneven.

This curious species exactly resembles *Panus stipiticus* with the exception of the hymenium. I know of no species to which it has a close affinity.

125. P. (Anodermei) *hypococcinus*, n. sp.; pileo subungulato carnoso-suberoso, intus fibroso zonatoque, inæquabili ex alutaceo-aurantio incano subtiliter tomentoso; poris parvis longis e pileo secernibilibus aurantiis intus coccineis.

Waynesville, Ohio. On rotten trunks. Sept. 7, 1844. *T. G. Lea, Esq.*

Pileus several inches across, subungulate or expanded, of a soft coriaceous or corky substance, uneven, buff and orange, becoming whitish when dry, very minutely tomentose; substance pale buff, (sometimes pink when dry), consisting of fibres which radiate from the base, and are crossed by concentric zones.

Hymenium bright crimson-orange. Pores small, $\frac{1}{70}$ of an inch broad, an inch long, crimson within, separable from the flesh, and partially from each other; edge of dissepiments orange, slightly thickened and flexuous.

This magnificent species approaches in some respects the genus *Fistulina*, but the pores, though partially separable, are those of a *Polyporus*.

126. Polyporus (Anodermei) *molliusculus*, n. sp.; imbricatus pileis effuso-reflexis sublobatis leviter zonatis albis; zonis strigis mollibus sparsis ornatis; contextu albo; poris mediis pallidis.—*Lea*, n. 39.

Cincinnati, Ohio. *T. G. Lea, Esq.*

Imbricated thin 5 inches or more long, 3 inches broad, sometimes perfectly resupinate, more generally with the border broadly reflected and slightly lobed, finely silky or nearly smooth, with zones of soft strigæ, which in the dried plant are perfectly innate. Substance white, thin, corky when dry.

Pores $\frac{1}{48}$ of an inch broad, at first entire with thick dissepiments, at length lacerated and elongated, wood-coloured.

Resembling in general appearance *Polyporus alutaceus* as figured by Rostkovius, but much thinner. I cannot refer it to any described species. Its position is amongst the white *Anodermei*.

127. P. (Anodermei) *endocrocinus*, n. sp.; pileo crasso carnoso-fibroso setis strigoso-horrido brunneo; contextu croceo-rhabarbarino; stipite brevi vel obsoleto; hymenio aureo-fusco; poris mediis laceratis; dissepimentis tenuibus.

On the decayed part of the trunk of a yellow hickory, Waynesville, Ohio, Aug. 29, 1844. *T. G. Lea, Esq.*

Pileus thick, 4-6 inches across, of a fleshy, fibrous consistence, absorbing much moisture, dark brown, clothed with strigose, flat, lacerated setæ or scales; substance of a rich saffron; hymenium golden-brown. Pores $\frac{1}{60}$ of an inch broad, angular, with the edge of the thin dissepiments torn or fringed.

This species shrinks much in drying. It is allied to *Pol. Schweinitzii,* but is distinguished by its saffron coloured substance and strigoso-squamose pileus. Two specimens only were found.

128. P. (Anodermei) *galactinus,* n. sp.; pileo dimidiato carnoso molli inæquabili strigoso-tomentoso lacteo intus zonato fibroso; margine tenui; poris parvis albis.

On rotten trunks, Waynesville, Ohio, Aug. 29, Sept. 10, 1844. *T. G. Lea, Esq.*

Pileus 2-3 inches broad, 1½ inch long, dimidiate or reniform, and elongated behind, convex uneven, milk-white, clothed with strigose down of a soft, fleshy substance, zoned within and consisting of radiating fibres.

Hymenium flat, or slightly concave. Pores $\frac{1}{100}$ of an inch broad, scarcely visible to the naked eye, but giving to the hymenium a silky lustre, white; dissepiments very thin, slightly uneven.

Nearly allied to *Pol. undulatus,* Schwein, and *Pol. symphyton,* Schwein. The dried specimens are rigid, and sometimes have the margin dark brown.

129. P. (Anodermei) *dryophilus,* n. sp.; pileo crasso rigido ungulato scabroso inæquabili incano-ferrugineo-flavo; contextu cinnamomeo; hymenio cinnamomeo fusco; poris parvis intus rhabarbarinis.

On living red-oak, Waynesville, Sept. 5, 1844. *T. G. Lea, Esq.*

Pilei subimbricate 4 inches broad, 3 inches long, ungulate, unequal, rough with scabrous points, formed by innate pubescence, of a ferruginous yellow, but subdued by a thin white film.

Substance fibrous, hard, cinnamon.

Pores externally cinnamon brown, within ferruginous-yellow, about $\frac{1}{80}$th of an inch broad, angular, with thin dissepiments.

Nearly allied to *Polyporus dryadens*, but a smaller more rigid species, with larger differently coloured pores. It has also much resemblance to *P. gilous.*

* P. *conglobatus*, Berk.

This curious species not only occurs on beech, but also on hickory, in which case it is of a fine ochre red, with a purplish hymenium. It is so fragrant when fresh, that it is recognised at a distance of twenty yards, the odour being a combination of that of strawberries and pine-apple.

* Trametes *lactea*, Berk.

I am obliged to alter the name of this species, as while the number of the Decades in which it was described was in the press, M. Léveillé had published another fungus under the name of T. *incana.*

* Dædalea *ambigua*, Berk.

Specimens gathered at Waynesville approach near to *Lenzites repanda* and L. *applanata*, combining the characters of both. The normal form, however, exhibits a Dædalea. Even in the thinnest specimens the margin is not acute.*

130. Trametes *sepium*, n. sp.; pileo tenui reflexo basi effuso subtiliter tomentoso pallido-ligneo zonis saturatioribus; contextu albo; hymenio poroso-sinuoso pallido.

On dry fence-rails, Waynesville, Ohio, Sept. 9, 1844. *T. G. Lea, Esq.*

Pilei effused at the base, reflexed above, laterally connate, at first often attached by the vertex or triquetrous, pale wood-coloured, finely tomentose, marked with numerous darker zones.

Hymenium pallid, consisting of slightly sinuous pores, about $\frac{1}{30}$th of an inch in diameter.

Its nearest ally is apparently *Dædalea zonata*, Schwein.

131. Dædalea *pallido-fulva*, n. sp.; coriaceo-suberosa; pileo dimidiato subnitido azono pallido; hymenio pallido-fulvo; poris angustis parce sinuosis rectis. *Lea*, n. 35.

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* Since the above was printed, after fuller consideration, I am inclined to refer all the forms to *Trametes lactea.*

On a dead log in a log-fence, Cincinnati, Ohio, March 19, 1842. *T. G. Lea, Esq.*

Pileus 1½ inch long, 3 inches or more broad, stemless, dimidiate, even or rather rugged zoneless, or with one or two obsolete lines of growth rather shining, at first most minutely pubescent, pallid. Substance hard, wood-coloured.

Hymenium pale tawny. Pores mostly straight, $\frac{1}{60}$th of an inch broad.

A very distinct species, just intermediate between *Dædalea* and *Lenzites.*

132. Lenzites *Cratægi,* n. sp.; pileo coriaceo rigido glaberrimo nitido cervino concentrice sulcato fasciatoque; quandoque radiato-ruguloso poris flexuosis demum elongatis; dissepimentis molliusculis, hic illic lamellæformibus.

Cincinnati, Ohio, Oct. 12, 1840. *T. G. Lea. Esq.*

Pileus orbicular 1½ inch broad, fixed by the vertex, rigid coriaceous, quite smooth and shining, repeatedly zoned and sulcate.

Hymenium brownish. Pores $\frac{1}{60}$th of an inch in diameter, slightly sinuous, much elongated towards the centre, dissepiments thin, soft.

This beautiful species has exactly the habit of *Hexagona tenuis,* but the pores are very different. It has been gathered at Isle aux Noix, Canada, by Dr. Maclagan, of whose collection it is n. 154. His specimen is ungulate, and marked with little radiating lines, which are wanting in Mr. Lea's plant.

133. Hydnum *diffractum,* n. sp.; pileo carnoso-lento crasso glabro alutaceo margine incurvo, stipiteque obeso concolori diffractis; aculeis subulatis integris mollibus alutaceo-pallidis.

On the ground in dry woods, Waynesville, Aug. 26, 1844. *T. G. Lea, Esq.*

Pileus 3 inches broad, convex smooth, of a tough fleshy substance, at length much cracked and split, margin involute.

Stem 1½-2 inches high, ¾ of an inch or more thick, buff, and split like the pileus, tender when fresh.

Spines even, subulate, entire, soft, of a pale buff.

Smell vinous.

A remarkably rigid species when dry. Allied to *H. candidum* and H. *repandum.*

134. Thelephora *cuticularis,* n. sp.; imbricata coriaceo-mollis brunneo-purpurascens, pileolis inæquabilibus rugosis depresso-sericeis; hymenio sublævi pulverulento.

In the moist cavity of a dead tree attached to the wood, twigs, &c., Waynesville, Ohio, Aug. 23, 1844. *T. G. Lea, Esq.*

Imbricated; pilei ¾ of an inch long, laterally confluent, uneven, rugged, brown inclining to purple with a pale margin, of a soft, coriaceous consistence; surface soft, clothed with matted down not distinctly pubescent, zoneless.

Hymenium concave, nearly even, not setulose, smell strong and unpleasant.

One specimen gathered apparently in a different locality, consists of a mass of pilei running one into the other with but little distinct hymenium.

Allied to *Thelephora terrestris.*

135. T. *albo-marginata,* Schwein! mss.; latissime confluenti-effusa rarius breviter reflexa umbrina centro pruinosa, margine albo-tomentoso.—*Lea,* n. 49.

On bark of dead button-wood (*Platanus occidentalis*), Cincinnati, Ohio, March 19, 1842. *T. G. Lea, Esq.*

At first consisting of distinct orbicular patches which soon become confluent; umber, velvety but by no means bristly clothed with a white bloom, in the centre quite even or irregularly rugose, sometimes reflexed, in which case the pileus is brown and silky, margin white, tomentose, not fimbriate.

This was distributed under the name of T. *arida,* but more perfect specimens show that it is a fine and very distinct species. It is possible that T. *albo-badia* may be a synonym, for I do not find the name adopted above from Sir. W. J. Hooker's Herbarium in Schweinitz' list.

136. Sphæronema *oxysporum*, n. sp.; peritheciis subulatis flavis apice nudis; sporis ellipticis utrinque appendiculatis.

On the hymenium of some decaying *Polyporus*, apparently P. *betulinus*, Waynesville, Ohio, Aug. 3, 1844. *T. G. Lea, Esq.*

Externally resembling *Sphæronema subulatum*, but distinguished by its spores having an elongated filament at either extremity, and by the naked tip of the perithecium which has a more compact structure.

137. Diplodia *Mori*, n. sp.; peritheciis globosis dispersis siccitate collapsis; sporis obovato-oblongis pallidis simplicibus.—*Lea*, n. 144.

On twigs of *Morus multicaulis*, Cincinnati, Ohio, June 25, 1840. *T. G. Lea, Esq.*

Sometimes aggregate and oblong from the confluence of several individuals; more frequently solitary. Occasionally the contents of the spores are attracted to either end, but I do not find a septum even in decaying specimens.

PSILOPEZIA, g. n.

Hymenium planum ascigerum omnino immarginatum strato tomentoso innatum. Asci ampli; sporidia elliptica binucleata.

138. P. *nummularia.*—*Lea*, n. 243.

On a decayed log in a wet place, Cincinnati, Ohio, July 16, 1842. *T. G. Lea, Esq.*

Orbicular ⅛ inch broad, flat, purple-brown, growing on a white tomentose stratum, which forms a narrow border. Asci large, containing eight large elliptic, binucleate sporidæ.

The characters of this genus are precisely those of *Pyronema*, which was founded on the old confluent state of *Peziza omphalodes*.

It has the habit of *Corticium*, with the hymenium of a *Peziza*, from which it is distinguished by the total absence of any true margin. The name of *Pyronema* is evidently inapplicable to the present species.

* Patellaria *carpinea*, Berk. Peziza carpinea, *Pers.*—Lea. n. 154.

On Hornbeam. Cincinnati, Ohio. Oct. 31, 1839. *T. G. Lea, Esq.*

This is not a good *Peziza*, though it certainly has asci and sporidia. The former are clavate, the latter subcymbiform. *Ditiola*, to which Fries is inclined to refer it, has no asci. The present plant is, I think, certainly congeneric with *Peziza rhabarbarina*, Berk., which has been referred by Desmazières to *Patellaria*. It is, however, to be observed that neither have the septate sporidia of P. *atrata*.

139. Sphæria (Seriatæ) *Maydis*, n. sp.; maculis parvis subellipticis elevatis; peritheciis paucis; ostiolo unico conico; sporidiis oblongis curvulis uniseptatis.

On dead culms of Zea Mays. Cincinnati, Ohio. May 1, 1841. *T. G. Lea, Esq.*

Habit that of *Sphæria Arundinacea*. Spots minute, often purple-brown, punctiform, or subelliptic, rarely linear, containing very few perithecia, with a single broad conical ostiolum. Sporidia oblong, slightly curved, uni-septate. Very different from *Sphæria Zeæ*, Schwein! as appears from an authentic specimen in Sir W. Hooker's Herbarium.

140. S. (Subtecta) *argyrostigma*, n. sp.; late dispersa; peritheciis minoribus depresso-globosis epidermide tectis astomis. Maculis epidermalibus punctiformibus nigris centro candidis; sporidiis cymbiformibus pallidis.—*Lea*, n. 139.

On dead leaves of *Yucca filamentosa*. Cincinnati. Feb. 8, 1842. *T. G. Lea, Esq.*

Appearing like a scattered *Phoma*, but it has distinct asci. It is curious that a species of *Phoma*, which I have named P. *dispersum*, allied to P. *concentricum*, often occurs on the opposite side of the leaf.

BOTANICAL INFORMATION.

Mc. Ivor's HEPATICÆ BRITANNICÆ; *or Pocket Herbarium of* BRITISH HEPATICÆ, *named and arranged according to the most approved system*; *by* WM. GRAHAM MC. IVOR.

Our Journal has had frequent occasion to speak favourably of *Specimens* of Cryptogamic Plants, which have been published from time to time by various Botanists, and which have contributed materially to a more complete knowledge of the species of our own country. Mr. Dickson and Mr. G. Don, of Forfar, were among the first of British Botanists (if not the first Botanists in any country) who adopted this mode of publication. Their specimens were indeed roughly preserved and given in Fasciculi with little taste as to arrangement or quality of paper. Mr. Hobson of Manchester, Dr. Greville, Mr. Thos. Drummond, the Rev. M. J. Berkeley, Mr. Gardner, now Director of the Botanic Gardens, Ceylon, Mrs. Wyatt of Torquay, and Mr. Gardiner of Dundee, have severally issued Fasciculi which have exhibited a great improvement over those of their predecessors; and through their means much light has been thrown upon the *Mosses*, the *Lichens*, the *Fungi* and the *Algæ* of Great Britain. A separate work was still much needed upon the *Hepaticæ*, and we have now the pleasure to announce an excellent little volume on these, the labour of Mr. W. Graham Mc. Ivor, at this time attached to the Royal Gardens of Kew. While resident in Scotland, and since his sojourn in England, this Botanist has been indefatigable in his researches after these beautiful plants, and has consequently been eminently successful, and no less so in the accurate determination of the species. That nothing may be wanting to display the specimens to the best advantage, he has had the pages of the little pocket volume divided into compartments, in the same way as was adopted in that general favourite, Mr. Gardner's volume of "British Mosses," with the name printed to each species, and a very full Index at the end. The specimens are well preserved, and so neatly laid down that the effect is more like a series of drawings than specimens of plants themselves; while, to add to the value of the collection, they are all grouped into the recent Genera of Nees von Esenbeck and the most approved writers on this family of Plants. The old genus *Jungermannia* is here divided into 31 Genera, *Marchantia* into 4: *Targionia*, *Sphærocarpus*, *Anthoceros* and *Riccia* stand as formerly. The number of species enumerated is 136. Of course every compartment cannot be expected to be occupied: a few species are so rare that the author has probably scarcely had specimens in his possession: of others he has been able to procure but few specimens, not sufficient for all the copies. But it is surprizing how successful Mr. Mc. Ivor has been in his researches, and we are sure that this "Pocket Herbarium" will be hailed by every lover of Cryptogamic Botany, both on the Continent and in our own Islands. Of the price we have not yet been informed, but we have reason to know it will be moderate, and that a guinea will be the utmost sum fixed on for the most perfect copies: less, in proportion to the reduced number of species, for the others. The work may be had by applying to Mr. Mc. Ivor, Royal Gardens, Kew, London: and we may observe that the volume is of such size that a small sum will cover the postage to any part of the British dominions.

Descriptions of New MUSCI *and* HEPATICÆ, *collected by* PROFESSOR WILLIAM JAMESON *on Pichincha, near Quito; by* THOMAS TAYLOR, M.D.

The following species, to which specific characters and diagnostic marks are assigned, were freshly collected in November last, and transmitted to the author in a letter just received, in the expectation of their immediate publication. This is a sufficient reason why he has not waited until all the Herbaria of all European Muscologists had been appealed to, to fix the absolute newness of the plants described. The inconvenience to naturalists of having the same species given under two different names by two different investigators appears more than balanced by the advantage of having two original views of the same subject. To some it may seem quite superfluous the number of times I have attached the name of Dr. Jameson to the species: I think it, however, too feeble an expression of my gratitude for the zeal with which, at my request, he has continued, in a distant land, to supply fresh materials for the admiration of Botanists.

PHYSCOMITRIUM, *Bridel.*

1. P. *Jamesoni*, Tayl. Caule brevissimo, erecto, subsimplici, foliis erectis, ovato-lanceolatis, acuminatis, concavis, margine incurvo, integerrimo, nervo evanescente; capsula erecta, obovata, sub-apophysata, operculo minuto, plano. —On Pichincha, *Prof. W. Jameson*, Nov. 1846.

Stems reddish. Leaves light green, adpressed, the margin of the upper part variously incurved. Pedicels slender, about one inch long. The apophysis of the capsule is best observed in aged individuals. Within the mouth of the capsule is an annular membrane, whose top is opaque and brownish-red, and shews irregular cells, the representatives of a peristome. By its entire leaves, whose nerves disappear before their summits, this approaches to *Gymnostomum apophysatum*, Tayl., but the leaves are fewer, more erect, and with larger acuminated points, while the *apophysis* to the capsule is far less considerable.

ZYGODON, *Hook. et Tayl.*

1. Z. *denticulatus*, Tayl. Caule cæspitoso, erecto, dichotomo, foliis imbricatis, subsquarroso-patentibus, oblongo-ovatis, apice denticulatis, margine flexuosis, nervo apiculato; pedicello demum axillari; capsula erecta, ovata, basi obconice strumosa, siccitate striato-costata, operculo

subulato; peristomio simplici, brevissimo.—On Pichincha, *Prof. W. Jameson.* Nov. 1846.

Tufts loose, 1-2 inches high, pea-green. Texture of the leaves dense. Peristome scarcely rising above the mouth of the capsule, of 16 very irregular, subtriangulate, acuminulate, short, pale teeth. Allied to Z. *viridissimus*, Smith: the leaves are wider, denticulate at the tops, and the peristome, such as it is, constant.

2. Z. *stenocarpus*, Tayl. Caule laxe cæspitoso, erecto, subdichotomo; foliis imbricatis, patenti-recurvis, siccitate subadpressis, lineari-lanceolatis, acutis, canaliculatis, integerrimis, margine subundulatis, nervo sub apice evanescente; pedicello stramineo, tenui; capsula erecta, cylindrica, striata, apophysi obconica; operculo longirostro, declinato; peristomio externo subnullo, interno 16-ciliato.—On Pichincha, *Prof. W. Jameson.* Nov. 1846.

Tufts nearly one inch high, pale-green. Texture of the leaves dense, and dotted, indeed strongly resembling those of Z. *viridissimus*, Smith, from which it differs by the greater size, the cylindrical capsules, and by the presence of an inner peristome, the outer being but an annular shred, in which divisions are not distinctly observable.

WEISSIA, *Hedw.*

1. W. *Jamesoni*, Tayl. Caule laxe cæspitoso, erecta, subsimplici; foliis subimbricatis, subpatentibus, ovatis, acutis, ruptinervibus, dentatis, submarginatis; pedicellis sparsis, lævibus; capsula erectiuscula, ovato-cylindracea, basi anguste apophysata; operculo longirostro, rostro obliquo.—On Pichincha, *Prof. W. Jameson.* Nov. 1846.

Shoots exceeding one inch in height, rather thick, covered at the base with a dense ferruginous down. Leaves slightly twisted when dry. An *annulus* is present. Teeth of the peristome 16, lanceolate, acuminate, opaque, brown, equidistant, not marked by any depressions or longitudinal dark lines of division along the *axes.* From the obliqueness of the beak of the lid, the calyptra is concluded to be dimidiate. This is unlike any of the described *Weissiæ.* It has some analogy with *Eremodon splachnoides,* Brid.: the nature of the peristome is very different; and in this respect is more like that of our *Brachymitrium.*

MIELICHOFERIA, *Hornsch.*

1. M. *Jamesoni,* Tayl. Caule brevissimo, cæspitoso, erectiusculo; surculis clavatis; foliis arcte imbricatis, erectis, ovatis, acutis, subintegerrimis, uninerviis; pedicellis caule quadruplo longioribus, apice incurvis; capsula rotundato-ovata, apophysi obconica, siccitate rugosa; peristomio brevissimo, albido.—On Pichincha; *Prof. W. Jameson.* Nov. 1846.

Shoots scarcely one line long, reddish below. Teeth of the peristome lanceolate, somewhat approached in pairs, many are truncate. This is closely allied to M. *macrocarpa,* Hook. (*Weissia macrocarpa,* n. 74, Musci Americani, of Drummond.) The stems are far shorter, more clavate, the pedicels longer, while the capsule is more round.

SYRRHOPODON, *Schwaeg.*

1. S. *Jamesoni,* Tayl. Caule cæspitoso, erecto, subsimplici; foliis laxis, siccitate crispis, ex exsucca amplexante erecta basi patenti-recurvis, dentatis, nervo subpellucido percursis; pedicello tenui; capsula ovata, inæquali, inclinata. —On Pichincha; *Prof. W. Jackson.* Nov. 1846.

Tufts nearly one inch high, of a lively green. Peristome arising from a pale shallow subpellucid membrane within the mouth of the capsule; teeth 16, elongated, sometimes bifid or even trifid, very narrow, opaque, dark brown, twisted inwards when dry. Leaves with a diaphanous, colourless, highly reticulated amplexicaul base. The ovate inclined capsule and loosely set leaves distinguish the present from other described species of the genus; the teeth of the peris-

tome too, twisted or inflexed when dry, are very remarkable.

DICRANUM, *Hedw.*

1. D. *Jamesoni*, Tayl. Caule laxe cæspitoso, erecto, subdichotomo; foliis laxis, basi patentibus apice erectiusculis, ex lata basi subulato-setaceis, subserrulatis, nervo percursis, siccitate flexuosis; pedicellis demum axillaribus, subflexuosis; capsula ovata, inæquali, curvato-inclinata, lævi; operculo longirostro, rostro incurvo.—On Pichincha; *Prof. W. Jameson.* Nov. 1846.

Tufts more than one inch high, yellowish-green. Leaves with an oblong or square, concave, but not closely sheathing, base; the upper part setaceous, entirely occupied by the nerve, which is there more expanded than at the base; the margin minutely serrulate by its projecting cells. Pedicel with an incrassated summit. Calyptra dimidiate. Peristome of 16 bifid, sometimes trifid teeth with unequal segments. In *Dicranum vaginatum*, Hook., the shoots are more slender, the dry leaves more adpressed, their setaceous tops shorter, straighter, more rigid and quite entire, their bases more closely embracing, while the capsule is more erect and more equal.

TORTULA, *Hedw.*

1. T. *Quitoensis*, Tayl. Caulibus brevibus aggregatis, innovantibus ramosis; foliis erecto-patentibus, ex angusta amplexante basi elongate obovatis, apiculatis, uninerviis, integerrimis, grosse cellulosis, tenellis; operculo conico-rostrato; capsula erecta, cylindrica, subcurvula; peristomio basin usque fisso.—Near Quito; *Prof. W. Jameson.* Nov. 1846.

Stems half an inch high. Leaves brown, nearly two lines long, their cells round; when moistened the leaves are very fragile. *Annulus* often persistent after the fall of the lid. Peristome about one-fourth the length of the capsule, the teeth binary, twisted, divided down to the base. This

differs from *Syntrichia subulata*, Web. et Mohr, by the peristome, the shorter lid as well as capsule; by the leaves wider above, and remarkably by their reticulated structure.

2. T. *fragilis*, Tayl. Caule laxe cæspitoso, crecto, subdichotomo; foliis imbricatis erectis, supremis patentibus, latis, lineari-lanceolatis, obtusis, nervo excurrente apiculatis, integerrimis, margine flexuosis, fragillimis, basi exsuccis; pedicello demum axillari, subflexuoso, tenui; capsula ex ovata basi cylindrica, inæquali, hinc incurva; operculo longirostro, obliquo.—On Pichincha; *Prof. W. Jameson.* Nov. 1846.

Shoots 1½ inches high, rusty brown, olive-green above. Leaves crowded and more expanded at the summits of the shoots, adpressed and twisted when dry, their nerve stout; their upper part of a dense structure, while the lower is devoid of green *parenchyma* and largely reticulated; pedicels overtopping the shoots by one quarter of an inch. Peristome short, divided to the base, pale reddish. Capsule slightly curved. Cape specimens of Tort. *ruralis*, Schwaeg., collected by Menzies, resemble our species; but, they have hair-pointed leaves, the fringe is tubular beneath, the capsule is less incurved, and the leaves more adpressed when dry.

3. T. *Pichinchensis*, Tayl. Caule laxe cæspitoso, erecto, subsimplici; foliis imbricatis, patenti-recurvis, lingulatis, obtusissimis, subrepando-denticulatis, nervo excurrente, flexuosis, margine reflexis; capsula ovato-cylindrica, inæquali, subcurvata; operculo rostrato, inclinato; peristomio basin usque fisso.—On Pichincha; *Prof. W. Jameson.* Nov. 1846.

Tufts scarcely half an inch high, the older parts of a rusty brown, the younger pale green. Margins of the leaves variously flexuose, the excurrent nerve subdenticulate on the back. Peristome short. Allied to our T. *Quitoensis*, by the shape of the capsules and by the lingulate leaves; but, then, these have a dense structure, their tops are more rounded, and they are, even when dry, subsquarrose; the pedicels, too, are far shorter.

BARTRAMIA, *Hedw.*

1. B. *subsessilis*, Tayl. Caule subcæspitoso, erecto, subsimplici; foliis arcte imbricatis, subsecundis, ex ovata basi subulato-setaceis, margine reflexis, denticulatis, siccitate strictis, rectiusculis; pedicello brevissimo; capsula subexserta, erectiuscula, sphærica, estriata; operculo minuto. —On Pichincha; *Prof. W. Jameson.* Nov. 1846.

Shoots 1½ inches high, brownish beneath, lively green above. Leaves with capillaceous points, whose denticulations are discernible by a strongly magnifying *lens.* A solitary capsule only was observed, at the mouth of which, after the most careful dissection, no traces of a peristome appeared; yet the fruit was full grown and brown. Cellules of the lid much smaller than those of the capsule. The pedicel is shorter than in B. *Halleriana*, Hedw., the leaves straighter, the size smaller; besides, the capsule is without *striæ.*

2. B. *Jamesoni*, Tayl. Caule laxe cæspitoso, erecto, dichotomo; surculis apice incrassatis; foliis arcte imbricatis, elongatis, siccitate subtortilibus, ex subulata amplexante basi linearibus, acuminatis, celluloso-subserrulatis; capsula axillari, sessili, erecta, rotundato-obovata, lævi; peristomio exteriori nullo.—On Pichincha, *Prof. W. Jameson*, Nov. 1846.

Tufts two inches high, grass-green. Shoots bushy above. The long points to the leaves show the nerve very distinctly, with considerable *pagina* on each side up to the very summits. Capsule concealed in the axils of the dichotomous shoots. No pedicel. No outer peristome: the inner rising from a pale, thick, annular membrane within the mouth of the capsule; the teeth lanceolate, acuminate, with a dark line in the *axis*, and occasionally some perforations.

This moss is shorter, the shoots more bushy above, and the leaves longer than in B. *Halleriana*, Hedw.; besides, the capsule is altogether sessile, and the outer peristome wanting. Here is a fine opportunity for those who delight in forming new Genera. In a natural system it is not easy to separate our species from the *Bartramiæ*.

3. B. *elegantula*, Tayl. Caule laxe cæspitoso, gracillimo, erecto, subfasciculatim ramoso; foliis approximatis, erectis, lanceolatis, subdenticulatis, nervo sub summo apice evanescente; perigoniis paucifoliis arcte imbricatis, subrotundis; pedicellis caulem superantibus; capsula subæquali, subglobosa, inclinata, substriata; operculo convexo acuminulato.—On Pichincha; *Prof. W. Jameson.* Nov. 1846.

Shoots 2-3 inches high, very slender. Pedicels flexuose. Capsule when thoroughly moistened perfectly smooth. Teeth of the inner peristome, one lying exactly under each of the outer, with one or two unequal *laciniæ*. Approaches B. *filiformis*, Hornsch., but it is not so branched, the bases of the leaves are narrower, their tops are more acuminate, the nerve evanescent under their summits, their cellules larger, the pedicels are not so fine, the capsule much larger, and the perigonial leaves are fewer and more closely adpressed.

4. B. *minuta*, Tayl. Caulibus aggregatis, demum innovanti-ramosis, erectis; foliis arcte imbricatis, strictis, erectis, anguste lanceolatis, acuminatis, subserrulatis, margine basi reflexis, capsulis subsphæricis, subpellucidis, erectiusculis; operculo convexo-conico, subpellucido. — Near Quito; *Prof. W. Jameson.* Nov. 1846.

Stems about 3 lines high. Shoots minute, straight, rigid and bristly with the acuminate points of the leaves. Pedicels about half an inch high, reddish, incrassated just below the capsules. *Exterior* peristome brownish-red, rather opaque, trabeculate, *interior* of short pale brown, geminate *laciniæ*, with an interposed, filiform shorter process. Its diminutive size, more closely adpressed leaves, paler and rounder capsules, which are never striated, will serve to separate this from states of B. *Marchica*, Sw.

MNIUM, *Hedw.*

1. M. *grandifolium*, Tayl. Caule elongato, erecto, subsimplici; foliis inferioribus distantibus, superioribus in rosulam congestis, patentibus, elongate obovatis, apiculatis, subimmarginatis, subdenticulatis; pedicellis subbinis; capsula lineari-obovata, cernua, subapophysata; operculo conico, acuminulato. — On Pichincha; *Prof. W. Jameson.* Oct. 9, 1827, Dr. Greville's Herb. collected again in Nov. 1846.

Stems 4-5 inches high, having at intervals congestions of leaves of past years, of which the upper is the most expanded. Leaves sometimes half an inch long, slightly marginate, their minute serrulation observable only under a highly magnifying *lens*. Pedicel bent down at the top. Capsule unequal. Inner peristome of 16 broad, perforated *laciniæ*, with three filiform processes interposed. It is exceedingly like M. *roseum*, Hedw., differing by the more tomentose and more elongated stems, the more marginate leaves, which, too, are nearly entire, and by the far longer and narrower capsules.

PTEROGONIUM, *Sw.*

1. P. *trichocladum*, Tayl. Caule prostrato, implexo, vage ramoso; ramis tenuissimis, subincurvis; foliis laxe imbricatis, erecto-patentibus, ex cordata amplexante basi lanceolatis, acuminatis, enerviis, subdenticulatis; pedicellis sparsis, gracillimis, lævibus; capsula erecta, ovata, peristomio subnullo.—On Pichincha; *Prof. W. Jameson.* Nov. 1846.

Patches pale green. Shoots slender as human hair. The peristome, occurring on aged capsules destitute of lids, appeared to be an exceedingly short, scariose, annular membrane lying within the mouth of the capsule divided into sixteen contiguous, very short, truncate teeth. *Perichætium* much wider than the shoots, and having closely adpressed leaves, the innermost of which have elongated points. The branches have some resemblance to those of *Hypnum Halleri*, Hedw., but are many times more slender, and the leaves are not recurved.

Hypnum, *Linn.*

1. H. *crassicollum*, Tayl. Caule procumbente, repente, subpinnato; foliis imbricatis, patentibus, rotundato-ovatis, apiculatis, concavissimis, subdenticulatis, enerviis; pedicellis sparsis, tenuibus, lævibus; capsula cernua, ovata, basi apophysata; operculo brevirostro.—On bark, Pichincha; *Prof. W. Jameson,* Nov. 1846. Demarara; *Dr. Greville's Herb.*

1-2 inches long, the Pichincha specimens green, those from Demarara yellowish-green. Pedicels bent down at their summits. Capsule with a wide mouth and very distinct apophysis at the base. Peristome pale brown; the inner with sixteen *laciniæ*, having single filiform processes interposed. The short straight beak of the lid will keep ours distinct from H. *molle*, Dicks., as well as the more numerous and more imbricated leaves of the latter, which, too, have a more distinct nerve and their *apices* entire.

2. H. *ulicon*, Tayl. Caule adscendente, implexo, vage ramoso; foliis laxis subsquarrosis, subplicatis, cordatis, acuminatis, mediotenus tenuinerviis, apice subserrulatis, pedicellis sparsis, lævibus; capsula suberecta, ovata, basi strumosa; operculo longirostro.—On Pichincha; *Prof. W. Jameson.* Nov. 1846.

Stems 2-3 inches long, branches rather short, slightly curved. Leaves pale green, very thin, their denticulation observable only under a highly magnifying lens. *Perichætia* pale, occurring on the main stem. Interior peristome with sixteen perforated *laciniæ* and double filiform processes interposed. Lid as long as the capsule. This approaches to *Pilotrichum patulum*, Brid.; the leaves, however are wider, more shortly acuminate, with the nerve not so long; besides, the *genus* is altogether different.

3. H. *scutellatum*, Tayl. Caule adscendente, subbipinnato, basi simplici, ramis complanatis, erecto-patentibus; foliis laxis, siccitate crispis, distichis, late cordatis, obtusiusculis, apiculatis, immarginatis, serratis, evanidinerviis; stipulis rotundatis, apiculatis, serratis; spiculis brevioribus, strictis, fragilibus; pedicellis ad caulis primarii basin sparsis, ad medium aggregatis, lævibus, crassiusculis, apice incurvis, incrassatis; capsula ovata, subæquali, celluloso-tuberculata; operculo rostrato, subinclinato.—On Pichincha; *Prof. W. Jameson.* Nov. 1846.

Shoots nearly 3 inches high, grass green. Stipules scarcely one fourth as large as the leaves; from under them emerge, arising from the stem, short jointed spicules; (the "setæ" of Hooker in Musci Exot.) Lower leaves nearly entire. *Outer* peristome pale straw-coloured; the inner with 16 perforate *laciniæ* and short binary processes interposed. Calyptra dimidiate. *Hypnum tamariscinum* of Swartz, (whose authentic fertile specimens we possess), differs by its fascicled shoots, more imbricated and more acute leaves, more elongated spicules of the stems, its shorter, thicker, more clustered pedicels, its sharply deflexed capsules having an *apophysis* on the upper side only (!), while the lower side is tuberculated. Again, *Leskea rotulata*, Hedw., is a smaller plant, has the leaves marginate, and its stems are destitute of spicules; its calyptra is certainly dimidiate in Menzies' specimens collected in New Holland, so that there is little left to characterize Bridel's genus *Hypopterigium*. Ours, however, may be *Hypnum laricinum*, Hook. Musc. Exot., the specimens from the Andes, but not those collected by Menzies at the Cape of Good Hope, the duplicates of which we possess, and which differ from the present by the smaller size, more fascicled branches, more aggregate pedicels, by the longer beak of the lid, and by the absence of spicules on the stems. The name H. *laricinum*, Hook., may therefore be left with the Cape of Good Hope specimens.

4. H. *floridum*, Tayl.; caule basi simplici, nudo, erecto, supra bipinnato surculis complanatis attenuatis; foliis erecto-patentibus, late ovatis, concavis obtusiusculis, acuminulatis, serrulatis, mediotenus, uninerviis; perichætiis confertis, majoribus; pedicellis lævibus; capsula ovata, subinclinata; operculo longius rostrato. — Near Quito, *Prof. W. Jameson.* Nov. 1846.

Five to six inches high, grass-green. Leaves without *striæ.* Outer peristome pale, the inner with 16 foraminulose *laciniæ* and pairs of very short filiform processes interposed. From our *Leskea superba* it differs by the more constantly attenuated branches, by the bipinnate stems, and by the acuminulate leaves; also by the more numerous and shorter pedicels, and by the inner peristome being more distinctly that of a *Hypnum.*

Leskea, *Hedw.*

1. L. *aciculata*, Tayl. Caule procumbente, elongato, pinnato; pinnis remotiusculis, patentibus; foliis laxis, erecto-patentibus, lanceolatis, longius acuminatis, serrulatis, mediotenus uninerviis; fructu caulinari; pedicellis aggregatis, brevibus, scabris, perichætio duplo longioribus; capsula suberecta, ovata; operculo rostrato.—Near Quito; *Prof. W. Jameson.* Nov. 1846.

Stems 6-8 inches long; branches very slender, about one inch long, slightly flexuose at their tops. Leaves sheathing, on the branches very narrow. *Perichætia* always on the main stem, about one third as long as the pedicels. Calyptra dimidiate. Capsule nearly erect, unequal. Inner peristome of 16 perforate *laciniæ*, without any filiform processes interposed. This is allied to L. *concinna*, Hook., only by the remarkable habit of the female inflorescence.

2. L. *leptoclada*, Tayl. Caule repente, squamuloso, bipin-

nato; pinnis brevibus, patentibus, remotiusculis; foliis caulinis late cordatis, acuminatis, subsquarrosis, rameis cordato-ovatis, acutis, omnibus integerrimis, mediotenus uninerviis, punctato-cellulosis; pedicellis gracillimis, lævibus; capsula ovata, erecta, subæquali; operculo conico, rostellato.—Near Quito; *Prof. W. Jameson.* Nov. 1846.

Patches wide, dense. Stems 1-1½ inch long, with a brown down on the inferior surface; covered with minute scales, resembling leaves, but varying in breadth. Monoicous. Leaves dense in structure, papillose, celluloso-crenulate; the perichætial closely adpressed, pale straw-coloured, elongato-acuminate. Calyptra dimidiate. *Outer* peristome of 16 rather opaque teeth; inner divided into as many equidistant *laciniæ,* without any interposed processes. The leaves are like those of *Haplohymenium microphyllum,* Schwaeg., but the branches are more distant, the stems more scaly, the capsules shorter, the lid more rostrate, while the inner peristome of Schwaegrichen's plant is that of a true *Hypnum.*

PLAGIOCHILA, *Nees et Mont.*

1. P. *Jamesoni,* Tayl. Caule decumbente; surculis adscendentibus, subsimplicibus, amplioribus, planis; foliis majoribus, imbricatis, patentibus, dimidiato-cordatis, obtusis, apice paucidentatis, margine ventrali basi rotundato; perigoniis linearibus, spicatis; in surculos productis; calycibus terminalibus campanulatis, bilabiatis, denticulatis, dorso alatis, ala denticulata; capsulis subexsertis.—On Pichincha; *Prof. W. Jameson.* Nov. 1846.

Loosely cæspitose; shoots 2-3 inches long, ¼ inch wide, olive-green. Leaves complanate, imbricated so that the inferior covers about ¼ of the next superior, the bases broad, the ventral margins passing across the stems, the dorsal tumid and recurved, and slightly decurrent. Perichætial leaves more erect and more denticulate than the cauline. Calyx large, the lips obtuse. Capsule oblongo-ovate. Perigonial leaves each containing a single anther within its ventricose base. This is one of the most specious of the genus; it is allied to *P. ensifolia*, Tayl., differing by the shorter, more erect shoots, the leaves more distinctly denticulate at their summits, their cells far larger, their dorsal base not so decurrent, while the ventral presents a larger volution across the stem.

MADOTHECA, *Dumort.*

1. M. *brachiata*, Tayl. Caule adscendente, bipinnato; foliis imbricatis, patentibus, oblongis, convexis, obtusissimis, integerrimis, basi undulato-crispatis; lobulis subimbricatis ligulato-ovatis, margine undulatis, basi ciliatis; stipulis oblongis rotundatis, cauli adpressis, basi decurrente laciniato-ciliatis; perichætii lateralis sessilis foliis subintegerrimis, lobulis stipulaque subdivisa ciliatis.—On Pichincha; *Prof. W. Jameson.* Nov. 1846.

Stems 4-5 inches long; shoots complanate; primary branches rather distant, patent, the secondary short, acuminate, recurved. Leaves convex, with recurved tops, the one inferior, scarcely covering one eighth of the next superior; inferior margin by no means decurrent; lobules, with their tops erecto-patent, their bases applied close to the stem. The perichætium about one line long, having 3-4 pairs of leaves, whose margins are sparingly denticulate, but those of the lobules and of the terminating stipule strongly ciliate. We have not seen an authentic specimen of M. *subciliata*, L. et L., collected likewise by Professor Jameson in the Andes of Peru; but the characters given justify the supposition that it differs from our species by the ovate and decurrent leaves, the upper of which are ciliate all round their margins, and all of them ciliato-dentate at the ventral base, whilst the bases of the lobules and stipules are nearly entire.—*See* Pug. vii. p. 9 of *Lehm. and Lind.*

PHRAGMICOMA, *Dumort.*

1. P. *laxifolium*, Tayl. Caule procumbente, subpinnato; foliis

laxe imbricatis, oblongis, decurvis, integerrimis, apice recurvis basi decurrente complicatis, lobulis basi tumidis, apice foliis adpressis, rotundatis, dentatis; stipulis integris, majoribus, rotundato-oblongis; calyce demum axillari, elongate obovato, supra compresso, apice cordato, tubo diviso coronato.—On *Musci* from Pichincha; *Prof. W. Jameson.* Nov. 1846.

One to two inches long, dusky olive; shoots sparingly branched towards their tops in a dichotomous manner, nearly patent. Compared with P. *bicolor,* Nees, it is distinguished by the less imbricated leaves, the more oblong stipules, and by the calyces destitute of folds.

Some Observations on DR. LEICHARDT'S *Overland Journey from* MORETON BAY *on the East Coast of Australia to* PORT ESSINGTON *on the North Coast : with a Map.**

By R. HEWARD, ESQ., F.L.S.

The indefatigable and enterprising Dr. Ludwig Leichardt who last year accomplished the arduous task of an overland journey from Moreton Bay on the East coast of Australia, to Port Essington on the North West coast, has lately been delivering a course of lectures at Sydney, N. S. Wales on the subject of his Journey. From these interesting papers and from other sources the following observations have been compiled, which as they tend to throw some light on a portion of the island-continent that has hitherto been shrouded in obscurity, will we trust afford information to all those who are interested in the progress of discovery now being carried out in Australia. Dr. Leichardt considers, that from the conformation of the surface of the country, the nature of its soil and vegetation, its supply of water and its meteorological relations, the whole line of route may be divided very naturally into about eight sections, each of which bears its peculiar character. Three belonging to the East Coast, three to the Gulf of Carpentaria, and two to Arnheim's Land, and the north-west coast of Australia.

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* We are indebted to the kindness of the Council of the Royal Geographical Society and to John Murray, Esq., for permission to use the map prepared by them to illustrate Dr. Leichardt's route.

I. The first comprises the scrubby country between Darling Downs and Peak Range, with the Dawson and the Mackenzie rivers, 27°—23° S. latitude, and is eminently characterised by the frequency and by the peculiarities of its scrubs. It is principally composed of sandstone, which, judging from its coal beds and the impressions of plants contained in it, is identical with the sandstone formation of the Lower Hunter. But in several localities it has been broken by basalt (whinstone), which forms either peaks, as Mount Aldis and Mount Nicholson, or the spine of large ranges, as Expedition Range. The basalt is generally connected with plains or with very openly timbered and treeless downs, clothed with a rich vegetation. But not only the high level land west of Darling Downs, which slopes almost imperceptibly to the south-west, but the valleys of the rivers and the sides of the mountains were covered with extensive scrubs principally composed of a species of (*Acacia*, *A. pendula*, A. Cunn?)* which has received the name of bricklow from the squatters, between the Severn and the Condamine. This shrub or small tree has a foliage of greyish green colour, and grows so close that it is impossible, or only with the greatest difficulty, that a man on horseback can make his way through it. The prospect from the Downs was rendered extremely pleasing not only on account of the open view which they allowed to the eye, tired of the uniform density of the scrub, but also on account of small copses of bricklow, *Fusanus* and *Bauhinia*, which were picturesquely scattered over them, and which often clustered round stately bottle-trees (*Sterculia sp.*) the shady retreat of numerous kangaroos and wallabies. These Downs were covered with various grasses and herbs, but the vervain, a wiry plant, prevailed to such a degree on many of them, that Dr. Leichardt called them Vervain Plains.

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* So named by the late Allan Cunningham in his journey of 1827 when endeavouring to reach the country to the westward of 152° E. longitude in Latitude 28° S.

Though the banks of the Mackenzie, so far as it was travelled along partook of the scrubby character of the country, there is reason to believe that the scrub ceased a little lower down, and its large supply of water makes it probable that it forms a considerable stream towards the sea coast. It disembogues very possibly at Broad Sound, in lat. 21° 30′ S. as the natives pointed to the north-east, when asked about the course of the river. The country south-east of Expedition Range between Zamia Creek and Erythrina Creek, was, for a great distance to the eastward, flat, and openly timbered; it was well grassed and tolerably well provided with water at the foot of the range. Its latitude was 24° 50′, but the course of its waters seemed to be directed either to Port Curtis or to Keppel Bay. Should a practicable communication with the sea coast be found, there is little doubt that this will become a valuable district for pastoral purposes.

II. The Plains of Peak Range, with the Isaacks, and the Upper Suttor rivers; between 23°—20° 50′ S. latitude bears a character very different from that of the first section. Here a long range of noble peaks, composed of domite, extends far to the W.N.W., and offers to the west and south-west a wide view over basaltic plains and open downs, which alternate with low and openly timbered ridges. To the eastward of those peaks, basaltic ridges, with gently undulating outlines, narrow plains, and abrupt sandstone ranges, form numerous valleys, along which creeks descend to the eastward, winding in their lower course through an immense level country, and joining the Isaacks, which comes from the north-west, and forms the chief outlet of the waters to the sea. An open forest covers the whole district, with the exception of some narrow belts of scrub along the Isaacks and on the sandstone ranges; and the most luxuriant grass clothed not only the black soil of the basaltic plains, but the stiff flats and the sandy banks of the creeks and river. The supply of water was, however, not in proportion to the number or size of the channels; and it was on the magnificent downs of Peak Range that Dr. Leichardt and Mr. Calvert nearly perished for want of water. It was here that the party felt for the last time a hot wind, from the west and south-west, which direction points to that desert interior which even the persevering boldness of Captain Sturt has not been able to conquer. Waterholes existed, however, in the upper part of the eastern creeks, and swampy lagoons seemed to become numerous down the Isaacks, which joins the sea very probably near the Mackenzie, in Broad Sound. The Upper Suttor partakes of the character of the Isaacks, but as it was far more accessible from the head of the latter than from its own lower course, it has been placed in the second division of the journey, though it belongs to the system of the waters of the third.

III. The Lower Suttor, and the Burdekin rivers, with their table land, 21°—18° S. latitude, characterised by its supply of running water, its primitive rocks, its limestone, its numerous ranges, and its fine open well-grassed forest.

The elevation on the upper course of these streams renders the climate much cooler than might be expected from its latitude; and besides that several large tributaries, as the Cape, the Clarke, the Perry, drain in all probability large tracts of available country; if a settlement is to be established on the east coast it ought to be at the mouth of the Burdekin, which is supposed to be at Cape Upstart, on the southern extremity of Halifax Bay. Should the entrance of the river be barred, as is the case with all the rivers of the east coast south of Wide Bay, it must be remembered that the inner barrier, which extends from Cape York down to Bunker's Islands, forms along the coast a channel of smooth water, which may be considered in the light of a river, the navigation of which has been repeatedly recommended by Captain King, the very best authority on such a subject. The flats along the river are chiefly formed by the detritus of coarse granitic rocks, the feldspar of which has been transformed into clay mixed with grains of quartz derived from the same source. Stiff clay soil was limited, and confined to hollows and depressions, round which the poplar-gum generally formed a belt of bright green foliage. Rotten ground was not uncommon, but it always proved to be a mixture of clay with sand. The open forest of narrow-leaved ironbark and box, on a rather stony ground, alternated with plains of various extent, richly grassed and frequently watered by numerous running brooks and springs. Large and deep lagoons were scattered over the valley, or were parallel to the river. But the approach to this interesting country is intercepted by a very mountainous region, and by many deep creeks, over which more practicable roads will no doubt be found in the progress of colonisation. The basalt appeared to have been broken by a still more recent eruption of lava, which expanded partly over it, and formed as wild and irregular fields of rock as ever covered the slopes of a volcano.

Dr. Leichardt makes the following observations on the Botany of the East coast. The vegetation changed very little from Moreton Bay to the northward. The open forest was generally formed by the narrow-leaved and silver-leaved ironbark, the flats were covered by box, the rocky shores of the rivers and creeks, by bloodwood and Moreton Bay ash; and the immediate banks of the creeks were lined with flooded gums and *Casuarina* which, farther northward, gave way to the drooping tea-tree, *Melaleuca Leucadendron. Linn.* No species of *Araucaria* were seen, but *Callitris,* (the cyprus-pine), covers the whole continent wherever a sandy rocky soil favoured its growth. The drooping myall ceased at Peak Range, the bricklow at the heads of the Burdekin and the Upper Lynd, where also the ironbark disappeared. Several species of *Bauhinia* adorned the scrubs with their rich white blossoms, and an arborescent species of *Cassia* with very long narrow seed-vessels, was observed between lat. 27° 30′ and 19°. *Careya arborea, Roxb*, was first met with at the Suttor, the clustered fig-tree first at the Burdekin; *Grevillea mimosoides* R. Br. and *Hakea lorea* R. Br. appeared first in lat. 26° 42′, *Grevillea lanceolata,* a new species showed itself first at the Suttor, where it was growing on a light sandy soil with *Pandanus spiralis* R Br.; *Grevillea ceratophylla,* R. Br. and *Acacia equisetifolia* were first met with in lat. 19° 19′. The poplar-gum, a species of *Eucalyptus* with a bright green foliage, formed patches of forest along the Isaacks, and grew on the stiff hollows along the Burdekin. An arborescent *Zamia* was growing on the heads of Zamia Creek, and on Expedition Range in lat. 24° 43′; a *Cycas* about four to five feet high, with pinnate leaves of a glaucous colour, on the Burdekin in lat. 18° 45′, and a *Sciadophyllum* in the valley of lagoons, in almost the same latitude. A *Nymphæa* was first observed on Brown's lagoons in lat. 24° 45′, and a species of *Nelumbium* near the Mackenzie river in lat. 23° 21′.

IV. The Lynd, the Mitchell, and the east coast of the Gulf of Carpentaria, between 18°—16° S. latitude. The fall towards the level country which forms a broad belt round the Gulf of Carpentaria, is much more rapid than the ascent from the east coast; and the course of the Upper Lynd is much more mountainous and wild than that of the Upper Burdekin. It is extremely interesting to the geologist to observe the same succession of rocks, granite, talchiste, porphyry, and sandstone, in descending to the Gulf, which were found at the east coast in ascending to the table land. But limestone was not met with on the west side of the York Peninsula, though it appeared extensively developed on the Burdekin. Basalt has broken through the various rocks, but the level country itself is formed of a clayey ironstone with grains of quartz, which extended all round the Gulf to Port Essington, and may be considered of a newer formation. The Lynd was joined by several running creeks, and was in its whole course well supplied with water. The country was openly timbered, and well grassed, and at the lower part of the Lynd and parallel to the Mitchell, were very large and deep ponds in which a species of *Nymphœa* grew and around which the pasture was particularly rich. The rivers within the tropics are almost all remarkable for the immense width of their beds, which are filled with sand, with the exception of those spots in which the naked rock cropped out. They were overgrown with small trees, and the number and size of the latter depends upon the frequency and strength of those rushes of water which occasionally sweep down. The Upper Lynd was, for instance, covered with trees, whilst the bed of the Mitchell was entirely free from them. It was near this latter river that the only serious casualty occurred to the expedition viz: the death of Mr. Gilbert the naturalist who was speared by the natives in a night attack, and two others of the party were wounded. They observed watermarks fifteen and eighteen feet above the level of the bed of the river evidently showing that a large body of water flows down to the sea in, perhaps, unusually rainy seasons. In finding these large channels, either dry or with small streams, occasionally lost in the loose sands, are we then to suppose that the power of the floods which formed them was formerly greater than at present, and that the decrease of moisture, which has been remarked by the old inhabitants of the colony, has equally taken place in the tropics? Analogy certainly justifies such a conclusion. Large tracts of country on the east coast of the Gulf were covered with box (a species of *Eucalyptus)*, and with a small tea-tree with broad lanceolate leaves. These trees generally indicated a stiff soil, which in the level country was never free from shallow holes, such as are called melon-holes by the squatters, formed, no doubt, by the infiltrating rain and standing water. In many of these holes were found dead crabs, and even fresh-water turtles, and many shells, which also proved that long drought had prevailed and destroyed these animals. Another feature of the country, are slight undulations, on which grew a few scattered rather stunted trees, amongst which was *Grevillia mimosoides*, R. Br. with its long, narrow, drooping, silvery leaves, which particularly attracted the attention of the travellers. The finest and most available country was along the creeks and rivers. Here the soil was much lighter, and the bloodwood, the leguminous ironbark, and a species of *Pandanus* grew well on it, forming an open forest. All the rivers of Australia have lines of holes and hollows parallel to them; these are generally filled by high floods, and keep the water much longer than the rivers themselves. Lagoons of this description were very numerous along the Staaten, the Van Diemen, the Gilbert, and the Caron, and appeared to be the constant resorts of the natives. To the north of the Staaten, towards the sea coast, there is a succession of plains, but the grass was generally stiff and wiry. If we compare the course of the rivers on the east coast of the Gulf of Carpentaria, it will be considered remarkable that the Lynd, which rises in the latitude of the head of the Gulf from the Table land of the York Peninsula, should go to the north-north-west, and belong to a system of waters which joins the sea in lat. 15° S. instead of taking a direct course to the westward, and of disemboguing in or near the head of the Gulf. A number of coast rivers, of probably very short courses, the Nassau, the Staaten, the Van Diemen, the Gilbert, and the Caron, take their origin from the moderately elevated country which bounds the valley of the Lynd and Mitchell to the westward.

V. The "Plains of Promise," so called by Captain Stokes, at the head of the Gulf of Carpentaria in 18° S. latitude, with the Flinders, the Albert, and the Nicholson rivers. These plains were covered with a variety of tender grasses and herbs, but bare of wood with the exception of a few straggling trees. The narrow valleys of the creeks were, however, filled with open scrub, formed by a small tree, which we called raspberry jam-tree, because its fresh-cut wood had the scent of that preserve. Should a harbour be found at the head of the Gulf of Carpentaria, which might allow ships to approach and to moor in safety, it would not only open this fine country to colonisation, but would allow the produce of the high land of the York Peninsula to be brought down to the Gulf of Carpentaria as well as to the east coast. Cattle and horses could be easily driven from coast to coast, and they would even fatten on their route, as water and feed are every where abundant.

VI. The scrubby west coast of the Gulf, with the Van Alphen, the Abel Tasman, the Seven Emu, the Robinson, the Macarthur, the Limmenbight, and the Wickham Rivers, between 18^0—15^0 S. latitude.

This portion of the journey was as remarkable for the number of large salt water rivers, as for the density of its tea-tree scrubs, and for the extent of its stringy-bark forests. They here came again to hills and ranges, and pebbles of granite and porphyry made it evident that the great arc of high land which sweeps round the head of the Gulf of Carpentaria again approached the sea coast. The Van Alphen, the Abel Tasman, the Robinson, the Macarthur, and the Limnenbight Rivers, formed broad channels of water, and offered to our travellers a magnificent sight, when, after long and harassing stages through a dense scrubby monotonous forest, they came suddenly upon them.

Captain Stokes, when exploring the head of the gulf, was struck with the comparatively low temperature in this latitude. Though the want of a thermometer prevented Dr. Leichardt from making any exact observations, he was still able to collect a number of facts which tend to corroborate Captain Stokes's statements. In travelling along the east coast of the gulf, they had generally light easterly and south-easterly airs during the day, but a strong cold wind from the south-west and south by west, set in at night, from which they suffered the more, as they avoided keeping a large fire, being fearful of the hostile natives.

At the head of the gulf the night winds came more and more from the southward, and changed to the south-east, and even east-south-east as they advanced along the west coast. The stronger the sea breeze was during the day, the heavier was the dew during the night, which was easily accounted for by the action of the cold southerly land breeze on the warmer moisture with which the sea air was charged. The bracing nature of the south breeze at night had a very beneficial influence on their constitutions.

VII. The River Roper and Arnheim Land, 15°—13° 40′ S. latitude.

The Roper is the only large fresh water river of the west coast of the gulf, as far as they followed it to the northward. It is fed by a great number of running creeks and brooks, all closely fringed by belts of *Pandanus*. On the steep and boggy banks of this river, Dr. Leichardt lost four of his horses, which unfortunately compelled him to abandon the largest portion of his botanical and geological specimens. Almost the whole country along the river was open, well grassed, and available for depasturing purposes. At its upper course exist fine plains, which are bound by sandstone ridges, and diversified by creeks, forming an extremely pleasing landscape. The high land was covered with an open stringy-bark forest on a sandy soil, but its level is frequently interrupted by steep rocky sandstone hills and ridges, at the foot of which tea-tree swamps with a peaty soil formed frequently the heads of creeks. It has been previously mentioned that the fall of the high land of the York Peninsula is more sudden to the westward ; the same is the case in a still higher degree in Arnheim land, for there is not only a very rapid fall in the creeks, but there are precipices 500—800 feet high, which border the valley of the South Alligator River, and over which numerous cascades rushed down to join their waters with those of that river. It was very remarkable that the only slope which allowed Dr. Leichardt and his party to descend into the valley is formed by granite, whereas the whole of Arnheim land and the ranges of the Roper are composed of sandstone, which has been broken through by basalt, near the divisions of the waters of the Gulf of Carpentaria and the north-west coast.

VIII. The Alligator River, and the Cobourg Peninsula, 13^0 40′—11^0 21′ S. latitude.

The leading features of this district are large swampy lagoons, extensive plains at the lower part of their course, densely wooded ironstone ridges, and a great number of creeks in the Coburg Peninsula, with limited flats of light alluvial soil, which are richly clothed with herbs and grasses during and immediately after the rainy season. These creeks generally enlarge into swamps called "Mariars" by the natives, before they are lost in the mangrove thickets, which covers their junction with the sea. Along the Roper the sea breeze continued strong and regular from the eastward, but the night breeze became indistinct, probably in consequence of a great number of parallel ranges, which intercepted its course. At the head of the river, however, they again felt a strong but warm wind from north-north-west to north-north-east, about nine o'clock at night. This was considered to be the sea-breeze from the north coast of Australia, flowing probably up to the high land along the valley of the Liverpool River. The 14th November, when on the high land of Arnheim land, and on western waters, they experienced the first thunderstorm since they had left the east coast; similar ones rose almost every day to the 23rd of November, and veered invariably from south-west, to north-east. It was the time when the north-west monsoon sets in, and these thunderstorms appeared to be the first indications of the change. Dr. Leichardt had been extremely anxious to reach Port Essington before the setting in of the rainy season, as there was good reason to believe that the peninsula was connected with the main by a neck of low land and mangrove swamps, which would have been rendered impassable by any continuance of rain. Though he afterwards found that connecting ridges run from the main land into the peninsula, it would notwithstanding have been extremely difficult to cross the plains and flats, which were large and numerous along the Alligator rivers and Van Diemen Gulf. They were again favoured with fine weather until they were fairly on the peninsula, when the thunderstorms recommenced, and on the day of their arrival in Victoria, heavy rains set in, which rendered the flats boggy, and flooded the creeks.

Dr. Leichardt states that the sea breeze at Victoria is extremely weak, and he thinks that Captain Macarthur is correct in attributing partly to this fact, the fever, from which the garrison has several times severely suffered. It is extremely difficult to assign any other reason for the want of salubrity. The country is undulating and hilly, the soil is sandy, and absorbs rapidly the heaviest showers; the forest is open, the mangrove thickets which cover the mouth of the creeks scarcely deserve the name of swamps, as they are washed by the tide, and form no accumulation of vegetable matter, which might produce the miasma or malaria which generally renders tropical countries so dangerous. After rain the air is fresh and pure and the ground dry. Those localities, which are freely exposed to sea breeze, as for instance Croker's Island, are, according to Captain Macarthur, very healthy.

On the character of the botany of the remaining portion of his journey Dr. Leichardt makes the following observations.

When entering upon the system of the waters of the gulf, the character of the vegetation changed very considerably, and a number of new forms appeared which bore resemblance to the flora of the Malay Islands and of India. The head of the Lynd was remarkably rich in various plants and trees. *Cochlospermum gossypium*, Kunth and a rose-coloured *Sterculia* attracted their attention by the beauty of its blossoms, a species of *Eucalyptus* with its butt covered by short foliaceous bark bearing seed-vessels of immense size, and blossoms of an orange colour was also observed. A rubiaceous tree belonging to the *Sarcocephaleæ* was distinguished by rich dark green umbrageous foliage, and a dwarf *Grevillea*, by its branches of crimson-coloured flowers. Two species of *Terminalia*, either shaded the creeks or grew on the rocky slopes. Lower down the river, a species of *Stravadium*, with loose drooping racemes of red blossoms fringed the shallow swampy lagoons; and on the banks of the Mitchell, in latitude 15° 51′ a species of *Corypha* grew to a large size, and in great numbers. A yellow *Villarsia* shared with the *Nymphæa* the ponds, and several yellow *Ipomæas* twined round the trees at the very edge of the water. Various species of *Melaleuca* took the place of the *Eucalyptus*, which disappeared, with the exception of the box, as we approached the coast. One species of *Pandanus*, was growing on a light sandy soil in the open bloodwood forest, and formed broad belts at the outside of the forest land along the levels of the Alligator Rivers; another species crowded round the running creeks in an almost impassable jungle on the west side of the gulf. The nonda-tree, which belongs in all probability to the order *Rhamnaceæ*, was a fine shady spreading tree, laden with yellow plums, between the Lynd and Van Diemen Gulf. The raspberry jam tree covered the slopes of the salt water rivers and the valleys of those creeks which intersected the plains at the head of the gulf. The stringy-bark tree reappeared on the sandy flats of the Upper Lynd; but on the west coast of the gulf it formed the principal part of a scrubby forest. Over Arnheim Land and the north-west coast towards Port Essington, the orange-blossomed *Eucalyptus*, a leguminous tree with a dark fissured bark, and a species of *Livistona* had an equal share in the composition of the forest. *Inga moniliformis* DC. was first seen at a tributary creek of the Mitchell: but was afterwards with a broad-leaved species of *Terminalia*, a white gum tree, and the mangrove myrtle (*Stravadium*) a constant companion of creeks and waterholes. A species of *Bossiæa* (*Acacia bossiæoides*, A. Cunn ?) with flat stem, composed principally the scrub of the west coast of the gulf, and it was here that we observed *Grevillea pungens* with thyrsi of scarlet flowers. A noble species of *Cycas* which frequently attained the height of fifty feet, formed large groves on Cycas Creek and the Robinson; but disappeared on leaving the river, and was not observed again until they arrived at Port Essington, where two or three small trees were seen growing near Victoria. The *Corypha*, which we had observed on Palm-tree Creek, and under Expedition Range, was found again on the Mitchell at Beames's Brook, and on the South Alligator River. Very stunted specimens of *Seaforthia elegans*, R. Br. grew on Arnheim Land, but noble trees of it were on the patches of brush along the Alligator Rivers, and formed groves and even a whole tract of forest between Raffles Bay and Port Essington.

It is generally believed that Australia is poor in edible fruits and vegetables. There is no doubt that very few are good, but it will be seen by Dr. Leichardt's remarks that the number of the edible productions of the vegetable kingdom was by no means small. They boiled the young shoots of some species of *Mesembryanthemum*, *Chenopodium*, *Portulacca*, and *Sonchus* as vegetables. The *Seaforthia*, *Corypha* and *Livistona* palms, yielded young edible shoots; but the two latter were either bitter or gave only a small supply, whilst the *Seaforthia* shoots (myroin of the natives of Port Essington) afforded most excellent eating. *Salicornia sp.* a small plant with articulate fleshy stem, which grows always on soil impregnated with salt, tasted well when boiled with meat, particularly when they were without salt. The young leaves of a *Typha* and the lower part of the leaf-stalks of the *Nelumbium* were good to eat, and the stem of a species of *Cymbidium* was edible, but very glutinous and insipid. A small round tuber, about three-quarters of an inch in diameter, of a sweet agreeable taste, was found in a camp of natives at Comet River, and belongs probably to a water-plant with floating leaves like *Potamogeton*. In the scrubs between the Mackenzie and Peak Range and along the Isaacks, were found large watery, slightly pungent tubers of a vine, which bore blue berries of a still more pungent nature. At the head of the Lynd, two kind of tubers were found in great abundance in a camp of the natives; but they were excessively bitter, and neither roasting nor boiling would render them palatable; at last they pounded them carefully, washed the pulp, and obtained a tasteless starch, which very much resembled arrowroot. The seed-vessels, the stems (ombelborro) and tubers (toori) of the *Nymphæa* were eaten by the natives of the upper Burdekin, and of the east coast of the gulf, and gave the travellers some hearty meals. The thick root of a little bean with yellow blossoms, and those of a species of *Convolvulus* on the plains of the Albert, formed the principal part of the repast of Nywall's tribe, near the East Alligator River. But the finest and most substantial food, was the allamur, or murruatt, the mealy rhizoma, or subterranean stem of a sedge, which the natives, of the Alligator Rivers and of the Coburg Peninsula obtained in large quantities. Amongst the fruits there was a small lemon, which abounded in the scrubs of Expedition Range and Comet River. The seeds of the kouradjong (*Grewia sp.*) yielded, when boiled for a long time, an agreeable acidulous drink. Those of *Sterculia heterophylla* (the kooremin), and of the rose-coloured *Sterculia*, round the gulf, made, when slightly roasted, a fine coffee, and the remaining grounds were good to eat. The spongy wood of the bottle-tree, a species of *Sterculia*, contained a cellular mealy substance between its fibres, which, when chewed, satisfied the cravings of hunger.

The seeds of the Mackenzie bean, so called, from being found first and most abundantly in the sandy bed of that river, formed a good substitute for coffee; those of the *Nelumbium* were however much finer, and the remaining grounds were agreeable to eat, and wholesome. The seeds of the vine-bean of the Roper a species of *Mucuna*? when pounded and boiled for a long time formed a very satisfying meal. Several species of *Capparis*, either shrubs or small trees, had edible fruits, they contained a sweet pulpy substance, in which the seeds were embedded; the latter were however very pungent. At the Isaacks a little tree with coriaceous leaves bore a small oblong fruit, having a surrounding calyx like a little acorn, with a thin, but sweet rind; the abundance of this fruit made up for the scantiness of its edible parts, it was much sought after by crows and cockatoos. At the head of the Isaacks and in the valley of lagoons they found a purple fruit with a many-celled seed-vessel; the thin rind had a slightly astringent acidulous agreeable taste; the tree had a pinnate leaf resembling that of the red cedar. *Santalum lanceolatum* yielded occasionally blue edible berries of the size of small cherries. The species of *Fusanus* which is mentioned in Sir Thomas Mitchell's expeditions, gave a rich harvest of fruit in the bottle-tree scrubs west of Darling Downs. A native mulberry with small white fruit, of a sweet taste, grew on the fields of lava, at the Burdekin; and an edible fruit of a white colour, with persistent calyx and viscous, like the fruit of the mistletoe, grew on a small tree along the upper course of the same river. Several species of figs, the rough purple fig *Ficus muntia*, the small round yellow fruit of *Ficus australis*, and the clustered fig of the Burdekin, were successively gathered. The latter yielded by far the richest harvest, as numerous bunches of the fruit were sprouting out of the trunk and largest branches from top to bottom. They were of the size of a small garden fig, of a yellow colour when ripe, but generally full of small flies and black ants; they were very heavy and indigestible, and the party several times suffered from eating too many of them. *Careya arborea* Roxb. (belonging to the *Barringtonneæ*) bore a harmless fruit, which, however, we never found perfectly ripe. The little gooseberry-tree *Coniogeton arborescens* Bl.? belonging to the *Terebinthaceæ* had a fruit of the size of a small compressed cherry, which was boiled, when not ripe enough, to obtain from it an acidulous drink, but which was very agreeable to eat when sufficiently ripened. The seed vessels of *Pandanus spiralis* R. Br. when ripe, contain a very sweet pear like pulp between their fibres; it proved very agreeable at the time, but extremely pungent, and a severe purgative. The natives roast and soak them, and probably drink the fluid with which they have washed out the pulp; it is probable if this fluid were to undergo fermentation it would yield a spirituous liquor. After having used the seed vessel the natives break it to obtain the kernel, which is also good to eat.

The seeds of *Cycas* appear to form a considerable part of the food of the natives at Cycas Creek and the Robinson. They are cut in slices, and spread over the ground and dried; when brittle they are soaked for several days in water, and afterwards tied up in tea-tree bark, to undergo a sort of fermentation, which destroys their poisonous principle, for in a fresh state they are violently cathartic and emetic. Three species of rose-apple *Eugenia,* were collected, one was a large scarlet fruit, with longitudinal ribs of a coarse and strong aromatic taste, another was of a delicate rose colour, and extremely pleasant. The smaller fruit of a species of *Acmena* was also occasionally gathered along the western creeks of Arnheim Land. A small rubiaceous tree at the Upper Lynd bore a rather dry, round, many-seeded acidulous fruit, which tasted like coarse rye bread, it was called the little bread-tree. The nonda fruit, oblong in form, about an inch in length, and of yellow colour when ripe, was very agreeable, and it appeared that the emus were very fond of it; they ate principally the unripe fruit, which was excessively bitter. It seems as if this bird was altogether fond of bitter fruits, for it also fed on the fruit of a small euphorbiaceous tree, which was perhaps the most bitter fruit that ever was tasted, and this bitterness was imparted to the flesh, and even the marrow of the bird. At Raffles Bay were found the lugula, a species of *Anacardium,* the succulent fruit stalks of which were very agreeable; but the envelope of the seed was exceedingly sharp and blistering to the lips and skin.

The gibong *Persoonia falcata,* R. Br. and the fruit of *Exocarpus latifolia* Lab. were occasionally found and eaten in Arnheim Land. One species of *Acacia,* a sapindaceous tree, and two species of *Terminalia*, yielded a fine supply of edible gum, and the fruit of a species of the latter genus was tolerably good to eat.

The native nutmeg of Port Essington *Myristica sp.* is of an oblong form, and not so large as that cultivated by the Dutch, but strongly aromatic. From the blossoms of the drooping tea-tree *Melaleuca Leucodendron* Linn, they procured a large quantity of honey. The native marjoram, belonging to the genus *Anisomeles* R. Br. was used for tea, and for flavouring soup. On one occasion an edible mushroom was found in the scrubs west of Darling Downs.

In their endeavours to find substitutes for tea, they were once severely punished from using the seeds of a species of *Acacia*, which produced violent sickness, and bowel complaints in several of the party. Mention has been made of the blistering qualities of the lugula, still more remarkable was that of the glutinous juice which exuded from the seed vessels of a species of *Grevillea* on the banks of the Macarthur. The pulpy substance which separated the seeds of an arborescent species of *Cassia*, had an acidulous taste, and was a mild and very effective medicine.

Dr. Leichardt considers that a very large proportion of the country he travelled over will be available for colonisation, and that the greatest part is fit for pastoral purposes, excepting only the scrubs of the east coast of Australia, the mountain gorges of the Upper Lynd, and the tea-tree scrubs of the west coast of the Gulf of Carpentaria. But even here broad belts of fine country extend along both sides of the larger rivers, and will very probably be found quite as good as the country of the Roper. Horses and cattle will do well over the whole extent, particularly at Expedition Range, along the Isaacks, the Burdekin, the east coast of the gulf, and on the plains at its head. The rapid increase of the buffaloes on the Coburg Peninsula, and the excellent condition of the herd of cattle which they keep at Port Essington, shows that the north-west coast of Australia, is no less favourable for the development of animal life. The elevation of Peak Range and of the Table Land of the Burdekin, renders it probable that these regions are fit for sheep.

The cotton, the indigo, the cocoa-nut, the banana, the arrow-root, the sweet potatoe, the bread-fruit, the jack-fruit, the sower-sop, the pine apple, the mango, and mangostine grew well at Port Essington; and Captain Macarthur informed Dr. Leichardt that according to the statement of the Malays, who had examined the swamps west of the settlement, they would do excellently for growing rice. The large plains of the Alligator Rivers would suit equally well, and to an almost unlimited extent.

If a line is drawn from Halifax Bay to Port Essington, and divided into three almost equal parts, the points of division would fall on Halifax Bay, on the head of the Gulf of Carpentaria at Limmenbight, and Port Essington. Should good harbours be found, and settlements be established on those points of division, they would scarcely be as far from each other as Sydney from Port Phillip, and the overland communication would be probably equally easy, or would be rendered so after a very short time.

In addition to these observations Dr. Leichardt gave a very extensive list of the zoological productions met with in the course of his journey and also some interesting remarks on the natives that they fell in with, among which the following remarkable circumstance is mentioned. The ear of the native Australian so sensitive to noises with the origin of which they are acquainted, as the rustling of a lizard or snake, or the rapid start of a kangaroo rat, did not perceive the foot-fall of the horses, and they were once with their whole train near a camp of jabbering, laughing, moving natives, without their being aware of the approach of the party. Once, a native walked at dusk into the camp, and was surrounded by the horses before he knew that other beings save himself were present.

Dr. Leichardt has collected the following facts in proof of the extraordinary drought experienced on the North Coast and which have induced him to suppose that part of the country had been remarkably dry for a succession of years.

1. The condition of large channels of rivers and creeks, which were either entirely dry or contained only tiny streams not at all proportionate to their widths.

2. The occurrence of dead crabs and fresh-water turtle on the box flats at the east side of the Gulf of Carpentaria. The turtle requires a great supply of water, and those skeletons which were observed did not appear to have been carried thither by the natives.

3. Extensive shallows on the west coast of the Gulf, surrounded by heaps of dead fresh-water muscle-shells, of large size, which were overgrown by small tea-trees, about four or five years old. The muscles must have lived and grown for a number of years in those hollows, which were now entirely dry.

4. The plains of the East Alligator Range were covered by dead fresh-water shells, particularly of the genus *Limnæa* which must have lived and grown in shallow holes and lagoons, which then existed all over those plains.

5. Lines of drooping tea-trees along several salt-water creeks at the west coast of the Gulf, were dead, in consequence of the want of the usual freshes, as the tree seems not to live on water entirely salt.

It seems impossible, in the present state of our information, to account for this remarkable phenomenon of the decreasing supply of water on the surface of this continent. The supposition of a gradual rise of the land would explain why arms of the sea recede, and parts of the bottom of the sea become dry; but it would not explain the decrease of moisture in the atmosphere, or the greater evaporation or absorption of the waters in lagoons, which are not connected with any watercourse. The rise of the country would rather lead us to expect a greater precipitation of moisture round its elevated points. From observations made on the uninhabited parts of the colony it appears that this dessication is not dependant upon colonisation, upon the clearing of the ground, and the increase of stock, though there is no doubt that the latter must make a great impression on limited water-holes not supplied by springs. We are, therefore, compelled to look for the cause in some until now unknown change of the atmosphere which may be periodical, and allow us to hope that the Australian continent will be again favoured with a series of more rainy seasons.

Dr. Leichardt concluded his lectures by laying before his audience the plan of an expedition on which he intended to start in October last. Captain Sturt's expedition having shown that the interior, in the longitude of the head of the gulf, is a desert at least to latitude 24° S. where the explorer was compelled to return. He considered therefore that it would not be advisable to attempt to cross the continent in that or in a higher latitude; he therefore proposed to proceed at once to latitude 23° S. where he found the Mackenzie and Peak Range, during his last journey; and as the Mackenzie was well supplied with water, he intended to follow it up to its sources, which he expected to find about 80 or 100 miles to the westward of the spot where he first came on the river. He would then be able to ascertain whether the western branches of the supposed water-shed go to the southward to join the system of the Darling, or whether they turn to the northward, and form the sources of the larger rivers of the head of the gulf of Carpentaria. Should the latter be the case, and should the country be sufficiently well watered, he would of course proceed to the westward, keeping the same latitude, and try to reach the waters of the north-west coast. But should want of water not allow him to continue his journey to the westward, or even to the northward, he would retrace his steps down the Mackenzie, and follow the track of his last journey to the Burdekin, where it is joined by the Clarke, in lat. 19° 12′ S. He then proposed to follow the latter river, and expected to find the heads of the Flinders, after having crossed either a table-land or a dividing range. He would then continue his journey to the Albert, and follow that river up to ascertain the latitude of its sources, and the nature of the country.

He would then continue on a westerly course, to come successively to the heads of the Nicholson, the Van Alphen, the Abel Tasman, the Robinson, and the Macarthur, and from the latter river he hoped to reach the waters of the west coast, in about latitude 17° 18′. Should success attend his journey he would then turn to the southward, and work his way parallel to the north-west and west coast until he reached Swan River.

This journey he hoped to complete in two years, though unforeseen difficulties might procrastinate it beyond that period. That his most sanguine expectations may be accomplished will be the sincere wish of all who can appreciate the labour and anxiety that such a journey has imposed on the persevering and indefatigable traveller.*

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* We are indebted to the kindness of J. P. Townsend, Esq., for the means of adding the following well-deserved complimentary lines on the return to Sydney of Dr. Leichardt.

ON DR. LEICHARDT'S RETURN FROM PORT ESSINGTON.

Thy footsteps have returned again, thou Wanderer of the Wild,
Where Nature from her lonely throne in giant beauty smiled;
Pilgrim of mighty wastes, untried by human foot before,
Triumphant o'er the wilderness, thy weary journey's o'er.

Thou hast battled with the dangers of forest and of flood,
And amid the silent Desert a conqueror hast stood:
Thou hast triumphed o'er the perils of mountain and of plain,
And won a nation's loud applause to greet thee home again.

Long had we mourned for thee as lost, and plaintive dirges sung,
For Time a wild, mysterious veil around thy fate had flung,
And Hope's declining energies with feeble effort strove
Against the boding voice of fear that haunts the heart of love.

And Rumour with her hundred tongues, her vague and blighting breath,
Had whispered tidings sad and drear—dark tales of blood and death:
Till tortured Fancy ceased to hope, and, all despairing, gave
Thy name a hallowed memory—thy bones a desert grave.

But, no! that proud intrepid heart clave to its purpose high,
Like Afric's martyr-traveller, resolved to do or die;
Like him to find a lonely death in desert sands of flame,
Or win a bright eternity of high and glorious fame!

Oft in the silent Wilderness, when brave men might have quailed,
Have thine unfailing energies to soothe and cheer prevailed;
For well thy hope-inspiring voice could speak of perils past,
And picture each approaching one less deadly than the last.

And oft e'en that stout heart of thine has saddened to despair,
When o'er some mild and lonely scene the moonlight shining fair,
Hath bid thy softened spirit feel how lonely were thy lot
To die—thy mission unfulfilled, unknown, unwept, forgot.

And when beside thy comrade's grave, thy stricken heart bowed down,
And wept o'er that glad spirit's wreck, its dream of young renown,
Oh! there was bitterness of soul in the silent prayer that rose,
Ere they left him in the Desert to his long and lone repose.

At length the hour of triumph came; the white man's track appeared;
Visions of bright and holy joy thy toil-worn spirit cheered;
A glorious pride lit up thy heart, and glowed upon thy brow,
For Leichardt's name among the great and good is deathless now.

Thy noble work of victory by deeds of blood unstained,
For man's appointed purposes a glorious world obtained;
Thy step upon the Wilderness, the harbinger of peace,
Hath bid that wild and savage night of solitude to cease.

Proud man! in ages yet to come the hist'ry shall be told
Of that adventurous Traveller, the generous, true, and bold,
Who, spurning hope of selfish gain, disdaining soft repose,
First taught the howling Wilderness to blossom like the rose.

ED. K. SILVESTER.

On SIR T. L. MITCHELL'S *discoveries in the interior of* NEW SOUTH WALES. *By* R. HEWARD, F.L.S.

Since the above observations on Dr. Leichardt's journey were written, intelligence has reached this country of the return to Sydney of Sir T. L. Mitchell from his expedition to the northern parts of Australia, an extract from his despatches it is presumed will prove an interesting addition to Dr. Leichardt's journey, tending as it does to confirm many of Dr. Leichardt's discoveries, and also putting us in possession of new facts in regard to the geography and botany of that portion of Australia.

At the commencement of the exploration they found the heat excessive, and water so very scarce, in the channel of the River Bogan, that they were obliged to abandon that route, and it was only with great difficulty, and after considerable delay, the party could be conducted to the River Darling. Throughout the month of January, Fahrenheit's thermometer stood frequently at 117°; in the shade it was seldom below 100°. The intense heat killed all their kangaroo dogs, and most of the party were attacked with opthalmia; the draught oxen were also so much distressed that some of them fell dead on the journey, and the expedition was obliged to halt for two weeks at the ponds of Cannonba, between the River Macquarie and the Bogan. It was subsequently ascertained that they could only hope to reach the Darling by the marshes of the Macquarie.

Sir Thomas, with his party, reached the junction of the Macquarie with the Darling, in long. 147° 33′ E. lat. 30° 6′ S. A few miles higher up he found a good ford across the Darling (or Barwan as the natives call it in that part), and advancing over a fine open country reached the Narran swamp at 26 miles from the Darling. This swamp appears to be almost an exact counterpart of the marshes of the Macquarie. The Balonne, which Sir Thomas describes as "only inferior to the Murray in breadth and depth," in long. 148° 21′ E., and lat. 28° 31′ S., separates to the south of that point into various channels. The most westerly and main branch is the Culgoa, which joins the Darling about thirty miles above Fort Bourke; three others, Sir Thomas has reason to believe, reunite and join the Darling higher up. The Narran terminates in the swamp of the same name. Sir Thomas remarks:

"The Narran seems a wonderful provision of nature for the supply and retention of water in a dry and parched country. The division of the main river into others already mentioned, is no less so; irrigating thus from one principal channel extensive regions of rich earth beyond the Darling, while the surplus, or overflow, instead of passing, as in common cases, to the sea, is received in the deep channel of the Narran, and thereby conducted to that extensive reservoir where, on rock or stiff clay, and under ever-verdant *Polygonum*, it furnishes an inexhaustible supply for the support of animal life.

"Along the banks of the Narran, the grass is of the very best description, *Panicum lævinode,* and *Anthistiria australis* (barley grass and kangaroo grass of the colonists) growing on plains or in open forests, very available, in every respect, for cattle stations. The seeds of the *Panicum lævinode* constitute the chief food of the natives, who bruise them between stones, and bake the dough into cakes. As I advanced, these natives fell back on the main river, where the assembled body received our party very kindly."

The expedition then ascended the Narran and the Balonne till it reached a natural bridge of rocks, in long. 143° 48′ E., and lat. 28° 2′ S. Here it halted to form a depot, while Sir Thomas, with a small party, examined the country to the N.W. The country proving poor and sandy he returned to the camp, and on the 23rd of April resumed his course up the banks of the river with ten men and the light carts, instructing those left behind to follow him in one month. From the abundance of water in the river, it was inferred that it must have other tributaries besides the Condamine; the junction with that river was not observed, though its course was seen. The Cogoon, a small tributary of the Balonne, was traced upwards to an isolated hill range, the centre of which is in long. 149° 2′ E., and lat. 26° 23′ S. The north-western summit of these elevations—Bindango, is connected, by a low neck of grassy downs, with small knolls of trap rock belonging to one of the masses of the coast range, in which the Balonne appears to have its source :—

“Northward from Bindango, other waters fall to the north-west, and I perceived in the remote distance one gap, in a tabular sort of rocky country, through which I hoped the water-course would lead; but I was disappointed in following it down, for this promising little river (the Amby of the natives) turned to the southward of west, and I found in the gap only a convenient pass for our carts to the interior country. I named this St. George’s Pass—in hopes it may yet become a point on an important line of route. The country through which this pass led consisted in general of sand-stone, where the tops of cliffs were distinguishable from the northward by the luxuriant grass upon them—a rather unusual feature in a sand-stone country. Southward and back from the pass, much good open forest land appeared around, as the prevailing characteristic.”

Next day a river “following to the south-west,” and “fully as large as the Darling,” was discovered; this was the Maranoa of the natives. Extensive reconnoissances both to the east and west convinced Sir Thomas that the course of this river was not favourable to the direction of his journey; forcing its way through the rocks, it flowed steadily to the S.W. The party left behind rejoined their chief here on the 1st of June; when it was resolved to trace the Maranoa upwards by the right bank, and for that purpose Sir Thomas, with a part of his men and four months’ provisions, started on the 4th.

Passing several tributaries of that river, they reached a chain of volcanic summits connected with a mass of table-land; which was called Hope’s Table Land. A pass between this and a higher range towards the coast was penetrated along a stream, which, after flowing some space to the N.W. turned like the rest to the S.W. Hence a long ride to the northward brought Sir Thomas to another chain of mountains extending westward about the 25th parallel. The surrounding country is thus described :—

"Beyond that range, whose summits are all of trap rock, I found deep sand-stone gullies, and in following down one of these I reached an extensive grassy valley, which terminated on a reedy lake in a more open country. The lake was supplied by springs arising in a swamp at the gorge of the valley which supported a flowing stream of the purest water. This stream spread into the extensive reedy lake, and to my surprise, was absorbed by it, at least so as to escape through some subterraneous outlet, for the channel of the river in which the lake terminated was dry. Returning to the party we soon brought the carts and dray down the sandstone cliffs to the banks of the Salvator, and pursued that river downwards until I discovered, which was soon obvious, that its course turned to the eastward of north, consequently that we were upon a river falling to the eastern coast."

From the rugged nature of the scenes around, the name of Salvator had been given to this river, and to another of a milder character, that of Claude; they unite to form the Negoa. The "smokes" showed that the good land about them was peopled. The Salvator was crossed in lat. 24° 31′ S.; the Claude about 10 miles further on. The river formed by their union flows to the N.E., and is conjectured to reach the sea about Broad Sound.*

A difficult sandstone country succeeded. On emerging from its ravines, a river, the Belyando, was struck flowing where first seen to the N.W. The expedition encamped on its banks in long. 147° 17′E. and lat. 24° S. After following its channel as far north as 21° 30′ S. (two degrees within the tropic), it turned to the N.E., and was recognised to be the Cape River of Dr. Leichardt :—

"I have since ascertained" says Sir Thomas, "that we were still on the seaward side of the division of the interior waters; or rather that the eastern coast range, hitherto supposed to extend from Wilson's Promontory to Cape York, is only imaginary; while the estuaries of two important rivers, affording easy access from the eastern coast to the rich plains of the interior, are realities which have remained undiscovered. That there was no feature deserving the name of a coast range to the westward of the Belyando was but too evident from the absence of any tributaries of importance; the sandy channels of water courses from that quarter having had no effect in changing the course, or character of the river, which last was very peculiar and remarkable, especially in its habit of spreading into several chains of ponds, surrounded by brigalow scrub, apparently a provision of nature for the preservation of surface water, resembling the network of rivers in the south. On the banks of one of the tributaries we found some trees seen by us nowhere else; one was a true fig-tree, having small leaves, and with the fruit fully developed and ripening."

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* The Mackenzie, probably, of Dr. Leichardt.

No time was lost by the party in retracing their steps to the camp on the Salvator, to resume their search for waters flowing to the Gulf of Carpentaria. At this part of his narrative Sir Thomas pauses to observe:—

"I ought to mention here that I have found the Syphon barometer of great utility in these researches, affording the only means of judging of the relative height of the various ranges; thus I ascertained when far up the Balonne, that we were but little higher than the bed of the Darling; that the Narran has scarcely any inclination at all; that the Belyando at the lowest point attained by me was not 600 feet above the sea; and in the present case, that the range under the parallel of 25° S., is the highest we have crossed, extending into the western interior; our route across it is in long. 147° 23′ E., where the mean height above the sea exceeds 2000 feet; yet this we were only made aware of by the extreme cold, or by the barometer, for there is nothing in the appearance of the country to lead to such a conclusion; on almost every clear night, Fahrenheit's thermometer fell to 9 deg., and occasionally at 4 a.m. the mercury was as low as 7 deg."*

Resuming his journey with a small party, the Surveyor-General reached a gap in a westerly range, connected with hills to the northward, in long. 146° 42′ E., lat. 24° 50′ S.

"On ascending the range early next morning, I saw open downs and plains, with a line of river in the midst, the whole extending to the N.N.W. as far as the horizon. Following down the little stream from the valley in which I had passed the night I soon reached the open country, and during ten successive days I pursued the course of that river, through the same sort of country, each day as far as my horse could carry me, and in the same direction, again approaching the tropic of Capricorn. In some parts the river formed splendid reaches, as broad and important as the river Murray; in others it spread into four or five channels, some of them several miles apart; but the whole country is better watered by numerous tributaries arising in the downs than any other portion of Australia I have seen. The soil consists of rich clay, and the hollows give birth to water-courses, in most of which water was abundant. I found, at length, that I might travel in any direction and find water at hand, without having to seek the river except when I wished to ascertain its general course, and observe its character. The grass consists of *Panicum lævinode* and several new sorts, one of which springs green from the old stem. The plains were verdant; indeed, the luxuriant pasturage surpassed in quality, as it did in extent, anything of the kind I had ever seen. The myall tree† and salt bush (*Salsolæ*) (so essential to a good run); are also there. New birds and new plants marked this out as an essentially different region from any I had previously explored; and although I could not follow the river throughout its long course at the advanced season, I was convinced that its estuary was in the Gulf of Carpentaria; at all events, the country is open and well watered for a direct route thereto. That the river is the most important of Australia, increasing as it does by successive tributaries, and not a mere product of distant ranges, admits of no dispute; and the downs and plains of Central Australia, through which it flows, seem sufficient to supply the whole world with animal food. The natives are few and inoffensive. I crossed the river at the lowest point I reached, in a great southern bend, in long. 144° 34′ E., lat. 24° 14′ S., and from rising ground behind the left bank, I could trace its downward course far to the northward. I saw no *Callitris* (pine of the colonists) in all that country, but a range showing sandstone cliffs appeared to the southward, in long. about 145° E., lat. 24° 30′ S. The country to the northward of the river is, upon the whole, the best; yet in riding 90 miles due east from where I crossed the southern bend, I found plenty of water and excellent grass; a red gravel there approaches the river, throwing it off to the northward. Ranges extending N.N.W., were occasionally visible from the country to the northward."

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* This, if there is not an error in the quotation, is a most extraordinary circumstance. Twenty-five degrees of frost at an elevation of only 2000 feet in latitude 25° S. has never previously been recorded.

† Sir T. Mitchell considers this to be the *Acacia pendula*, A. Cunn.

The discovery of this river and the country through which it flows was the more gratifying after having been disappointed in the courses of so many others. Sir T. Mitchell has most appropriately called this evidently important river after our most gracious Sovereign, the "Victoria."* From this point Sir Thomas hastened back to rejoin his comrades left behind. The only other results of the expedition are indicated in his notice of their employment during his absence:

"I reached that camp on the 8th ultimo, having been absent about a month, found the cattle and horses refreshed, and in condition for pursuing our route homewards. In nine days we reached the depot camp, where I left Mr. Kennedy with the heavy drays and cattle, and received the agreeable intelligence that, during the long period in which that party have been stationary, the natives had given no trouble; that the men were all well, and the old cattle in good condition. I had straightened the route in returning, so that it is now a most convenient road, well watered by permanent supplies. Mr. Kennedy's inquiries amongst the natives led to a very important discovery, which we have since made, namely, that the Maranoa turns south about thirty miles below where he had his camp, and joins the Balonne only a day's journey above this spot whence I write. We have also discovered on the banks of this river much rich pastoral land, and about lat. 26° 30′ S., open downs, resembling on a smaller scale those on the Victoria; and whether the vast extent of intervening country may not admit of a direct passage across from these to the central downs, without crossing the Plutonic ranges, remains to be ascertained during a season when the water holes are better filled. Into that country the channels of the Warrego and Nive turned when I had to leave them; much native smoke arose there; and I regret that I cannot now explore the course of these two rivers. The survey of the Maranoa forms a line permanently supplied with water and grass, from this camp to the farthest limits I have reached, and directly in prolongation of my road across the Hawkesbury and Hunter, intended originally to have been made to Liverpool Plains. One link only is still wanting to complete the chain; it is from this natural bridge on the Balonne to the furthest point reached by me in my journey of 1831, a distance of about seventy miles; and I hope to find the country in that direction passable for this party in its way homewards."

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* It will be a curious coincidence if the Victoria of Sir T. Mitchell should eventually prove to be identical with the Albert of Capt. T. L. Stokes, which river that officer last saw flowing through the Plains of Promise, and disembouching in the Gulf of Carpentaria.

Numerous observations and measurements were made, and Sir Thomas intimates to the governor that he possesses rich materials on the present occasion for a map of that part of Australia which he has explored.

Short Description of a New Genus of Plants, belonging to the Order PROTEACEÆ, *from South Africa; by* W. H. HARVEY, ESQ., M.R.I.A. &c.

(*With a Plate*, TAB. XV.)

Dr. Lindley, in his account of the Swan River vegetation, notices the remarkable fact that the generic groups of *Proteaceæ* appear to have been so fully represented in the very limited collections made previously to the revision of the order by Mr. Brown, that among the great number of new species since discovered, no new genus, with the exception of *Manglesia*, has been recognised. Such a circumstance, occurring in an order so extensive and diversified in character as this is, is indeed extraordinary. It is therefore with a strong feeling of pleasure that I proceed to detail the characters of a South African shrub, belonging to this order, which appears to be distinct from any African type. For a knowledge of it I am indebted to Sir W. J. Hooker, who has not only liberally presented me with specimens, but permitted me to name and describe the genus. This I shall do under the name of

FAUREA, *Harv.*

Involucrum nullum. *Flores* spicati. *Perigonium* quadripartitum, equale (?), deciduum. *Stamina* 4, apicibus concavis laciniarum perigonii inserta. *Squamulæ* 4, hypogynæ. *Ovarium* sessile, uniloculare, uniovulatum. *Stylus* filiformis, persistens ; *stigma* oblongum, quadrangulare, verticale, glabrum. *Nux* monosperma, sessilis, undique barbata, stylo persistente caudata.—Frutex *Capensis, glaber ; foliis lanceolatis petiolatis, integerrimis ; spicis terminalibus, gracilibus.*

Faurea *saligna*, Harv.

HAB. At Macalisberg, South Africa; *Messrs. Burke and Zeyher.*

Frutex. *Rami* adulti glabri, corrugati, cylindrici, flexuosi; juniores minutissime appresse pubescentes. *Folia* alterna, lanceolata, acuta, basi secus petiolum attenuata, 3-4 uncias longa, subfalcata, verticalia, patentia, glaberrmia, nitentia, minutissime punctata, uninervia, venis reticulatis, anastomosantibus. *Petioli* plano-compressi, supra minutissime pubescentes. *Spicæ* terminales, subsessiles, 3-4 uncias longæ, involucro nullo suffultæ. *Flores* sessiles, numerosissimi, sparsim in rachi sulcato inserti, spiraliter quadrifarii, approximati, quisque bractea squamæformi minuta subtensus. *Alabastri* (tantum visi) appressæ, pubescentes, patentes, sursum leviter curvati, 3 lineas longi, clavati. *Stamina* ad apicem laciniarum inserta; filamenta brevia; antheræ oblongæ. *Ovarium* ovatum, sessile, lana longa sericea vestitum, uniovulatum. *Stylis* filiformis, longus. *Squamæ hypogynæ* 4, deltoideæ, acuminatæ, glabræ. *Nux* capillis lutescentibus densissimis barbata, stylo persistente rufo nitido glabro caudata. *Semen* . . . .?

From the above generic character it will at once be seen that *Faurea* is mainly distinguished from *Protea* by the inflorescence; but this is accompanied by so great a difference in habit, and affords, throughout the order, such an important guide to affinity, that it will be allowed to be, in the present case, of generic importance. In *Protea*, as is well known, the flowers are aggregated in dense capitula, surrounded by an imbricated involucre composed of many large, coloured scales: here they are disposed in slender spikes, destitute of involucre. Having never seen the expanded flowers of *Faurea*, I am unable to say whether there be any difference in the disposition of the leaves of the perianth. In the other parts of the flower, and especially in the bearded nut, tipped with its permanent style, there is a close resemblance to *Protea*. From all the other S. African genera, the differences, independently of inflorescence, are more marked. In no other genus is the style persistent. The nearest approach in inflorescence occurs in *Aulax*, whose male flowers are in terminal racemes; but the resemblance is distant.

I bestow the generic name as an affectionate tribute to the memory of my lamented friend, W. C. Faure, Esq., son of the Rev. A. Faure, senior minister of the Dutch Reformed Church at Cape Town, a young man of much promise, and a most ardent Botanist; whose death occurred under peculiarly trying circumstances. In 1844, he left the Cape for India, having received a commission in the Hon. E. I. Company's military service. "Soon after his arrival," writes a mutual friend, "he was seized with cholera, and brought very near to death, but eventually recovered. A few months afterwards, he had to join his regiment, and in so doing to pass through a part of the country infested with robbers and people of bad character. While going through a jungle or ravine, with another officer and a few soldiers, he was shot at by some persons concealed in the wood: the aim proved too true: he fell, and with difficulty reached the next station, where he died, twelve hours after, far from family and friends, and just at the outset of his career! His amiable temper and great talents had made him generally respected."

My acquaintance with Mr. Faure commenced in 1838 and terminated in 1840, when I returned home from the Cape. During those years he was frequently my companion in short excursions in search of plants; and I much enjoyed and valued his society, independently of the bond of union which our common love of Botany brought with it. I still cherish the memory of those delightful walks, along the hills or by the shore; and deeply do I sympathise with his family in their bereavement. Mr. Faure had an extensive acquaintance with Cape plants, especially those of the more accessible districts. He had closely studied the beautiful genus *Oxalis*, and was familiar with the variations of a large number of its species. The determination of these was his favourite botanical task; but to none was he indifferent; and in connecting his name with a South African shrub, I pay but a just tribute to the memory of one, who, had his life been spared, would probably have become a distinguished Botanist.

TAB. IX. *Fig.* 1. Portion of a spike with unexpanded flowers; *f.* 2. Petal and stamen; *f.* 3. Pistil and squamæ; *f.* 4. Ovary laid open to show the solitary ovule; *f.* 5. Nut:—*magnified.*

Notes of ALGÆ *observed at different altitudes in Aberdeenshire, by* G. DICKIE, M.D., *Lecturer on Botany in the University and King's College of Aberdeen.*

(*Continued from p.* 206 *of this volume.*)

The former paper was devoted solely to remarks on *Desmidieæ* collected at different altitudes during a short excursion, into the interior of Aberdeenshire: the present communication will comprehend the other *Algæ* observed upon the same occasion.

With the exception of the *Diatomaceæ* and *Oscillatorieæ*, the productions, about to be noticed, have not given rise to such disputes respecting their true nature, as those already discussed. Still, the Zoospores of certain species, shortly after emission, have certainly been described as animals, and placed among the *Infusoria;* their further development has given rise to statements that animals, in some cases, become afterwards vegetables.

The motions of certain species of *Oscillatoria* are at least equally distinct as those of any organisms usually considered to belong to the vegetable kingdom, and yet it has been denied that they possess any independent power of motion.* They move notwithstanding. Three kinds of motion may be observed in them; first, the oscillating, one end of the filament being fixed, the other describing a segment of a circle with greater or less rapidity; second, a distinct

* Hassall, British Fresh-water Algæ.

bending of the filament upon itself, presenting the appearance of a writhing motion; third, the progressive gliding motion of an entire filament or of a fragment, resembling that of certain *Mollusca* or *Planarieæ.*

Mr. P. Grant has directed my attention to a remarkable motion, which may be observed in newly collected specimens of *Hæmatococcus binalis.* This beautiful species propagates freely by self-division; and the cells vary in number in different individuals, in some 2 and 4, in others 8, and more rarely 16. The phenomenon in question is that of rotation of the cells in the interior of the mucous matter which surrounds them. Leuwenhoeck observed long ago that, in the ova, of certain *Mollusca,* the yolk revolves in the surrounding fluid, at a certain stage. If there be no mistake about the phenomenon alluded to in *Hæmatococcus,* and I cannot detect any source of deception, and if to it, we add the mode of subdivision of the cells, we have a remarkable analogy between the ovum of certain animals, and an organism decidedly vegetable, and of very simple structure. In the ovum of the animal it is well known that the motion is produced by ciliæ, which make their appearance at an advanced stage; what may be the true cause in the plant I am unable at present to say.*

The *Diatomaceæ* here enumerated must not be considered as presenting a complete view of the species occurring at the altitudes alluded to; for the present, the more common forms are alone mentioned. Respecting their right to a place in the vegetable kingdom no doubt can remain, after the recent very important discovery of Mr. Thwaites; that zealous and accurate observer having detected a species of *Eunotia* in conjugation, as well as *Gomphonema minutissimum.* Respecting one genus, viz. *Schizonema,* it may not be irrelevant to state, that the frustules seem to be developed from cells, propagating by self-division as well. The very general diffusion of *Diatomaceæ* is well known: I have found them very abundant in the excrement of the fresh water mussel, (*Mya margaritifera*, Linn.) Some *Infusoria* seem to feed upon the smaller species: I have seen *Naviculæ* on the outside of and mixed up with the so-called stomachs in what were supposed to be *Leucophrys patula* and *Bursaria vorticella* of Ehrenberg: the siliceous loricæ are rejected after the digestion of their contents. The smaller species of *Closterium*, &c., often share the same fate. I have also seen *Naviculæ* and other forms of *Diatomaceæ* in what was supposed to be the stomach of a parasite (probably a *Cercaria*) which infests *Limneus pereger*. In the fine mud deposited from the sea foam, at and above high water mark, after storms, I have found a mixture of fresh and salt water forms.

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* The motion in the *Hæmatococcus* is very slow, compared with that in the ova in question.

I. Pannanich cliffs, at about 1100 feet.

Coccochloris *protuberans*, Hæmatococcus *murorum*, Lithonema *crustaceum*, Lyngbya *punctalis*, Oscillatoria *rupestris ?*, Scythymenia *rupestris ?*, Stigonema *atrovirens*, Diatoma *flocculosum*.

II. Craigendarroch, about 1300 feet.

Conferva *ericetorum*, Hassallia *ocellata*, Hæmatococcus *binalis*, Tetraspora *lubrica*, Tolypothrix *distorta*.

III. Khoil, at 1600 feet.

Draparnaldia *glomerata*, Hæmatococcus *binalis*, Nostoc *commune*, N. *sphæricum*, Oscillatoria ——— ?; Amphora *ovalis*, Cymbella *helvetica*, Epithemia *alpestris*, Eunotia *diodon*, E. *monodon*, Surirella *biseriata*.

IV. Lochnagar, at 2000 feet.

Hassallia *ocellata*, Hæmatococcus *binalis*, Lyngbya *zonata*.

V. Lake of Lochnagar, 2563 feet.

Bulbochæte *setigera*, Hassallia *ocellata*, Tolypothrix *distorta*;

in boggy places near the lake were observed, Coccochloris *variabilis*, Hæmatococcus *binalis*.

VI. Lochnagar, at 2600 feet.

Hæmatococcus *binalis*, and Zygnema ——— ?

VII. Lochnagar, at 3600 feet.

Hæmatoccus *binalis*, Lyngbya *zonata*, Nostoc *commune*, and Oscillatoria ——— ?

VIII. Near Loch Aitchichan, at 2800 feet.

Hassallia *ocellata*, Hæmatococcus *binalis*, Stigonema *mamillosum*, Tetraspora *lubrica;* in the loch, at 2967 feet, Conferva *ericetorum*, Oscillatoria *nigra?* and Scytonema *Myochrous*, the latter, along with Jungermannia *emarginata*,* was in great profusion, covering the stones in the bottom. Diatoma *flocculosum*, Eunotia *triodon*, Navicula *Suecica*, Surirella *biseriata*.

IX. Near Linn of Dee, about 1190 feet.

Draparnaldia *glomerata* and Lyngbya *zonata*.

X. Near Castleton of Braemar, about 1100 feet.

Coccochloris *protuberans*, Sorospora *montana*, Stigonema *atrovirens*.

XI. On the table-land, north side of Loch Callater, in a spring, was found abundantly, Lynbya *copulata*, the altitude was not measured, but estimated as about 2000 feet.

XII. Little Craigendall, at about 2064 feet.

Nostoc *sphæricum*.

XIII. Little Craigendall, at 2400 feet.

Bulbochæte *setigera*, Hassallia *ocellata*, Hæmatococcus *bi-*

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* *Carabus catenulatus*, was observed about the edges, and *Colymbetes bipustulatus* in the loch.

nalis, H. *rupestris*, Nostoc *cæruleum*, Raphidia *viridis*, Sorospora *montana*.*

In order to afford some idea of the altitudinal range of the *Algæ* enumerated here, I add a list of such of them as have been observed at Aberdeen, near the sea level, *Bulbochæte setigera, Conferva ericetorum, Draparnaldia glomerata, Hassallia ocellata, Hæmatococcus binalis, Lyngbya Zonata, Nostoc commune, N. cæruleum, Raphidia viridis, Tetraspora lubrica, Tolypothrix distorta.*

The Hill of Fare, a nearly isolated range of small extent, not much exceeding 1000 feet at its highest point, commences about fourteen miles west from Aberdeen, and extends four or five miles nearly east and west. I have observed in its streams, *Lemania fluviatilis, Trentepohlia pulchella, Draparnaldia tenuis, Lyngbya Zonata, Batrachospermum moniliforme, B. vagum*,† and on wet rocks and in marshes on the higher parts of the hill at 600 to 800 feet, *Stigonema atrovirens, S. mamillosum*, and *Scytonema myochrous.*

It is scarcely necessary to remark that the *Desmidieæ* appear to have in general a greater altitudinal range than most of those *Algæ* enumerated here; it is, however, probable that future observations may add considerably to the number of species of the other tribes, growing at high altitudes.

Supplementary Notes on the BOTANY OF THE AZORES; *by* H. C. WATSON, ESQ.

By their geographical position, if not by their geological relations also, the Azoric Isles become invested with a greater botanical interest than would otherwise appertain to their own scanty flora; which itself has probably been augmented by the importation of several species from Europe. The consideration of this peculiar interest induces me to print a supplementary list to the "Catalogue of Azorean Plants," which was published in the London Journal of Botany about three years ago (vol. 3, p. 582-617.) I am now enabled to add nearly fifty phænogamous species, discovered in the Island of St. Michael's, or San Miguel, (with very few exceptions) through the persevering researches of a resident botanist, Thomas Carew Hunt, Esq., Her Majesty's consul at the Azores.

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* *Pisidium nitidum* and *Colymbetes arcticus?* were seen in marshes at this altitude.

† *B vagum* was observed some years ago in Loch Phadrich, near Castleton of Braemar, at about 2000 feet.

And it seems desirable also to place on record some corrections and other notices relating to species included in the "Catalogue" formerly published, which subsequent cultivation of them in England, the receipt of more perfect specimens from Mr. Hunt, or the remarks of other botanists, have better prepared me to do. All the species enumerated in the subjoined supplementary list, excepting *Viola tricolor* and *Lolium perenne*, which were sent from Flores by Dr. Mackay, have been communicated to the Botanical Society of London or to myself, from the islands of St. Mary's (very few) and St. Michael's, by Mr. Hunt, together with an ample supply of duplicates of most of the rarer species of the Azores, for distribution to the members and correspondents of that active and useful Society. I may be allowed to observe here, while referring to Mr. Hunt's valuable exertions towards completing our knowledge of Azoric botany, that in sending his collected specimens to the London Society, he has taken the course which best insured their *immediate* distribution into numerous herbaria in England, Europe and America.

1. *Supplementary List of Azoric Species.*

✓ Papaver Rhœas, *L.*
✓ Rapistrum rugosum, *Berg.*

✓ Capsella Bursa-pastoris, *De C.*
✓ Viola tricolor, *L.*
✓ Spergula arvensis, *L.*
✓ Hypericum Elodes, *L.*
✓ Erodium moschatum, *Willd.*
✓ Myrtus communis, *L.*
✓ Ononis arvensis, *L.* (*Aut. Brit.*)
✓ Vicia Bithynica, *L.*
✓ Lotus macranthus, *Lowe.*
✓ Prunus Lusitanica, *L.*
✓ Myriophyllum alterniflorum, *De C.*
✓ Alternanthera polygonoides, *Br.*
✓ Aichryson villosum, *Webb.*
✓ Daucus Carota, *L.* ?
✓ Ammi Visnaga, *Lam.*
✓ Ammi Huntii, *Wats.* (desc. infra, p. 384.)
✓ Conium maculatum, *L.*
✓ Coriandrum sativum, *L.*
✓ Smyrnium Olusatrum, *L.*
✓ Vinca major, *L.*
✓ Erythræa lutea, *R.* et *S.*
✓ Myosotis arvensis, *L.*
✓ Cynoglossum pictum, *Ait.*
✓ Lycopus europæus, *L.*
✓ Lamium amplexicaule, *L.*
✓ Ballota nigra, *L.*
✓ Marrubium vulgare, *L.*
✓ Verbascum virgatum, *With.*
✓ Statice Limonium, *L.*
✓ Thrincia hirta, *De C.*
✓ Pyrethrum Parthenium, *Sm.*
✓ Senecio erraticus, *Bert.*
✓ Xanthium spinosum, *L.*
✓ Plantago Serraria, *L.*
Amaranthus ——— ?
✓ Achyranthus argentea, *Lam.*
✓ Trichonema Columnæ, *Reich.*

Allium subhirsutum, *L.*
Ruscus aculeatus, *L.*
Potamogeton lucens, *L.*
Festuca elatior, *L.*
Lolium perenne, *L.*
Gymnogramma Lowei, *Hook. et Arn.*
Lastrea multiflora, *Newm.*
Lycopodium complanatum, *L.*
Equisetum limosum, *L.*

Mr. Hunt has also collected and sent examples of *Silene Armeria*, *Spiræa Filipendula*, *Cedronella triphylla*, and *Phleum pratense*; but accompanied by the suggestion, that they were introductions through cultivation or otherwise. Two others are marked doubtful in the list. The species which I enter doubtfully under the name of *Daucus Carota* (Linn.) is considered by Dr. Charles Lemann, to be "certainly *D. neglectus*, Lowe Prim. Fl. Mader." It also resembles the specimens distributed among Borgeau's Canary plants, under the name of *D. parviflorus* (Desf.). To the *Amaranthus* I am not able to assign a specific name with any confidence. Two other species are entered under names of most variable application. The *Potamogeton lucens* has narrower leaves than our British plant, and is without fruit. The *Festuca elatior* would be so named by English botanists; but it is not *Festuca pratensis* (Huds.); neither is it exactly the plant intended under name of *Festuca arundinacea* (Schreb.) in the 'London Catalogue;' though nearer to the latter than to the former, and probably the same as (or included in) *F. arundinacea* of Koch's Synopsis. It might seem strange that a conspicuous shrub, the *Myrtus communis*, should have been overlooked by Hochstetter and Guthnick as well as by myself, if truly native in the Azores. Mr. Hunt deems it to be truly indigenous, though now very scarce, through being in request with the tanners, and destroyed by them.

The *Ammi Huntii* appeared to be an undescribed species;

for I could find nothing corresponding with it in De Candolle's "Prodromus," or in the "Repertorium" of Walpers. And wishing that it should bear the name of its discoverer, I described it accordingly, in a paper communicated to the Botanical Society of London, in June, and to be reported in the Phytologist for July, 1847. It was distinguished from *Ammi majus* by the following character:

Ammi *Huntii* (H. Wats. ms.); caule glabro striato, foliis ternato-pinnatis bi-tri pinnatisve, foliolis elliptico-lanceolatis margine cartaligineo inciso-serratis, involucri foliolis trifidis pinnatifidisve, segmentis linearibus subintegris vel lanceolatis inciso serratis (foliiformibus). A. majori propinquum, sed faciliter distinguendum. Herba verosimiliter annua seu biennis. Caulis ramis divergentibus sive (præcipue superioribus) divaricatis. Folia inferiora decomposita subtripinnata sive plus minus biternato-pinnata; foliolis 2-3 poll. long., 1-1½ poll. lat. Pedunculi petiolis vaginantibus oppositi. Umbellæ generalis radii numerosi (10-20) tenues divergentes. Umbellulæ multifloræ. Corolla parva alba. Habitat in insula Azorica "San Miguel;" claro *T. C. Huntio* coll. et comm., anno 1846.

2. *Notes on some of the species enumerated in the "Catalogue of Azorean Plants."*—(London Jour. Vol. III. p. 585.)

1. Ranunculus *cortusæfolius* (Willd.) var.—"This is not the true species, but the *R. grandifolius* of Lowe, which I formerly considered a variety of *R. cortusæfolius*, but, having since seen ripe fruit, I have changed my opinion, and believe it to be a distinct species."—*P. B. Webb, Esq.*, in letter.

8. Fumaria *capreolata* (Linn.)—Perhaps equally near the Canary specimens distributed by Bourgeau, under the name of *F. media* (Lois.) and which do not seem to differ greatly from the *F. capreolata* of the same collection.

0. Cardamine *hirsuta* (Linn.)—Mr. Hunt sends specimens from St. Michael's. They belong to the form considered the typical one by British botanists, not to C.

sylvatica (Link). The latter is nearer *C. Calderarum* (Guth.) though distinct enough from that much prettier Azoric species.

14. Raphanus *Raphanistrum* (Linn).—Cultivation during four years in England, that is, during four descents of this annual plant, has partially annihilated the difference which was at first obvious between the pods of the Azoric and wild English plants.

15. Cakile *maritima* (Scop.) var.—The peculiar form of the pod, and its usually seminiferous lower joint, have hitherto proved hereditary in the plants raised in England; but the differences are too slight for specific diagnosis.

19. Viola *odorata* (Linn.)—The Azoric plant is apparently the same thing with *V. Maderensis* (Lowe), but I fear it is neither truly aboriginal in the Azores, nor a species distinct from *V. odorata.* Mr. Webb thus remarks upon it by letter: "This is certainly the *Maderensis* of Lowe, but it is only one of the hundred forms of *V. odorata.*"

31. Arenaria *macrorhiza* (Req.)—Specimens collected by myself, and others since communicated by Mr. Hunt, must belong to this species, according to the brief description in Flora Azorica, where it is enumerated as a variety of *A. marina* (Linn.) This latter is said, by Seubert, to be frequent on the coast rocks of all the islands. I do not recollect to have seen it there, but a maritime form of *A. rubra* was observed in some places, and the ordinary *A. rubra* (Linn,) more inland. Mr. Hunt also sends me *A. rubra.*

39. Hypericum *decipiens* (Wats.)—This, writes Dr. C. Lemann, "is identical with *H. Bæticum* of Boissier, who gives a figure, and remarks in his Addenda to the Flora of Spain, that it is probably only a variety of *H. undulatum* of Schousbæ, formerly considered a variety of *H. quadrangulum* (Linn) but quite distinct. We have this species also in Madeira." Most of the botanists to whom I communicated specimens of the Azoric plant, pronounced it to be "a southern form of *H. quadrangulum.*" Thinking otherwise

myself, and not finding any description of the species in the Prodromus of De Candolle, I published it as new, under the above name. I have no doubt now, that it is the *H. perforatum* of the Flora Azorica, although clearly distinguished from the Linnean *perforatum*, by its tetrapterous stem and other less obvious characters.

✓ 45. Ilex *Perado* (Ait.)—Possibly two species in the Azores; one with broader, more obtuse, and entire leaves; the other with the more oval leaves spinulose, or very acutely serrate at the margin. But we cannot found a diagnosis on such differences in an *Ilex*, unless accompanied by some other character, and the flowers and fruit of the second form are yet unknown to me. Dr. Seubert considers the two forms as a single species. And Dr. C. Lemann unites the Canary *I. platyphylla* (Webb) to the present species also.

✓ 76. Rubus *Hochstetterorum* (Seub.)—"A large southern form of *R. fruticosus*." *P. B. Webb.* If so, all our British *Rubi* are also but forms of *R. fruticosus.*

✓ 99. "Daucus *polygamus* (Gouan)."—Having received some additional specimens from Mr. Hunt, I can now confidently say, that there are two species, perhaps more, in the Azores. The two correspond tolerably well with our two English species, *Carota* and *maritimus*, or *Hispanicus.* Those which, to my eyes, look like *D. Carota*, are referred by Dr. C. Lemann to the *D. neglectus* (Lowe.) ✓

100. "Umbellifera." (Petroselinum *Seubertianum*, Wats. infra).—Mr. Hunt informs me that my No. 100 must be the *Kundmannia Sicula* (Flo. Azo.) from the locality given for the plant so designated interrogatively in the work referred to. The description cited by Seubert (De Cand. iv. 212), is sufficiently applicable to bear out Mr. Hunt's suggestion; the fruit of the Azoric plant being unknown at the date of Seubert's Flora. But assuredly the plant of the Azores belongs to a different genus, by its fruit; and it presents other sufficient distinctions from a specimen of the *Kundmannia*, shown to me by Dr. C. Lemann. The fruit is very

small, and it is by no means with confidence that I now refer this dubious plant to the genus *Petroselinum*, where it will stand next to the *P. trifoliatum* (Wats.) According to present unnatural arrangements of the *Umbelliferæ* into generic groups, I have felt obliged to separate the *Ammi Huntii* from these two; although the three species, united with a fourth from the Island of Flores (of which I possess only a single very immature specimen), might form together a natural-looking genus by their similarity of foliage and general habit. They combine badly with the other species of *Petroselinum*; and the *Ammi Huntii* is referred to its genus more on account of the pinnatifid involucrum than aught else, though, on the whole, associating with *A. majus* better than the others do with any species of *Petroselinum*. In the annexed character I compare the new species with *P. trifoliatum*, thus:

✓ Petroselinum *Seubertianum* (H. Wats. ms.)—Caule striato divaricato-ramoso, petiolis vaginantibus, foliis ternato-pinnatis biternatisve, foliolis ovatis acutis basi sæpissime inæqualibus margine calloso omnibus (etiam supremis) dense serrulatis, involucri foliolis lineari-lanceolatis integerrimis, raro nullis aut caducis, involucelli ovatis cuspidatis marginibus membranaceis. Herba (annua seu biennis?) glabra, pedalis aut minor. Folia pinnata, biternata, &c. Foliola inæqualiter cordato-ovata, sæpius ovata, rarius elliptico-lanceolata. Pedunculi foliis oppositi vel in ramulis terminales. Umbellæ multiradiatæ 10—20. Umbellulæ multifloræ 20—40. Flores luteo-albidi? Kundmannia Sicula, *Seub. Flo. Azo.* 42. Habitat ad vias juxta litus insularum Pico et San Miguel. Præter characteres indicatos a *P. trifoliato* (Wats.) gracili, stricto, elato, distinguendum statura humiliori, caule robustiore, e basi fere ramosissimo, foliis crassis fere omnibus decompositis, et serraturis numerosis etiam in supremis.

✓ 105. Viburnum *Tinus* (Linn.) In the numerous specimens sent by Mr. Hunt, there are many with the bark of the young shoots densely hairy, others with the same part quite smooth; but I do not see that this character is associated constantly with any other differences between the specimens.

✓ 113. Campanula *Vidalii* (Wats.)—Found by Mr. Hunt locally in St. Michael's and St. Mary's. Inflorescence racemose and few flowered, about 3 to 8, or panicled and many flowered, about 10 to 30; that is, varying with the luxuriance of the plants. The figure (Hook Icon. 684), was taken from a specimen with a few flowered raceme, and with the flowers scarcely sufficiently advanced for exhibiting the "corset-like contraction" near the middle of the corolla. It is not improbable that this remarkable contraction may be exaggerated in the dried specimens, owing to the thickness of the capsule, which will prevent the base of the corolla from contracting so much in proportion to the middle or upper part. Being glutinous, and of a texture between succulent and coriaceous, it is a troublesome plant to dry; both adhering to the paper, and becoming mouldy through the long retention of its moisture. It is, apparently, a true *Campanula,* as indicated by the more advanced fruit on some of Mr. Hunt's specimens.

✓ 122. Erythræa *Massoni* (Sweet)—"I can never believe this is the same as the Armorican plant." *P. B. Webb, Esq.*

✓ 128. Myosotis *Azorica* (Wats.)—I have raised numerous plants of this and the pale-flowered *M. maritima* (Hochst.) each year since 1842. They seldom survive to flower again a second season, although sufficiently protected from frost, a few degrees of which they will bear without injury. It is curious to observe that the rich deep colour of the corolla of *M. Azorica* has a tendency to fail in this country. My plants have run so much into varieties in the colour of the flowers, and even in the form both of flowers and leaves, that I am now unable to say of some of the specimens, whether they should be referred to *Azorica* or *maritima;* while, too, some of them approximate to the Canary species which is labelled "*M. sylvatica,*" by Messrs. Webb and Bourgeau. In their wild state in the Azores, and the first year in England, they appeared as easily distinguishable as any other two species of their genus; and, indeed, among the cultivated plants, equally distinct examples may still be found, although others run so much alike. All the specimens of *M. maritima*, which I collected in Pico, the only habitat in which I found the species, were growing on the rocks by the shore, exposed to the sun, and with very little soil for their roots. All were obviously unhealthy, being shrivelled, twisted and distorted, with fruit mostly abortive, and only 2 to 4 inches in height. But when grown in flower-pots in England, with a sufficiency of soil, supplied with water, and kept rather in shade, they become straight, healthy plants, of 12 or 18 inches high, bearing a resemblance to our *M. sylvatica*. Some of the pale-flowered examples of *M. Azorica* very nearly meet these highly developed examples of the *M. maritima;* not only in the pale tint of the flowers, but also in the more rounded segments of the corolla, and the enlarged circle or "eye" around the orifice of the tube; the segments or lobes of the corolla being obliquely cordate, and the "eye" very small, in the deep-coloured plants of *M. Azorica*. It would be difficult to express on paper the differences in those small folds or elevations of the corolla, which surround the orifice of the tube in *Myosotis, Primula,* &c.; but they afford practical distinctions to the eye, available for recognizing species.

✓ 148. Hyoscyamus *Canariensis* (Ker.)—"Not distinctly different from the *H. Albus* of Dalmatia, which is a very variable plant." *Dr. R. C. Alexander,* in letter.

✓ 150. Sibthorpia *Europæa* (Linn.)—It may be worth mentioning that two or three good botanists have sought to correct my labels for this plant, by intimations that it is the *Disandra prostrata;* but assuredly it is our English *Sibthorpia*. The *Disandra* has not been found in the Azores, though native of other Atlantic islands.

✓ 156. Lysimachia *Azorica* (Hornem.)—The specimens collected by myself in Fayal and Flores, and the plants raised from their seeds in England, were so easily distinguished from *L. nemorum* (Linn.) by their narrowly elliptic (not subulate) calycine segments, and their procumbent (not prostrate and rooting) stems, with the less describable differences of colour and susceptibility to frost, that I did not hesitate to retain *L. Azorica* as a distinct species in my formerly published 'Catalogue.' Since that time I have received a root from St. Michael's, accidentally in the soil with other living plants, kindly sent to me by Mr. Hunt; and as this example from St. Michael's, as well as other dried specimens from the same island, stand between my former examples of *L. Azorica* and the English *L. nemorum*, both in the form of the calyx, and in their long, trailing, and occasionally rooting stems, I find it impossible now to indite any written character which will distinguish *L. Azorica* from *L. nemorum*. Nevertheless, the eye can do so by slight peculiarities of colour and form; and a frosty night shows most convincingly that some difference of constitutional susceptibility exists between the English species and its Azoric representatives, though the leaves of the latter will bear some few degrees of frost.

✓ 178. Thrincia *nudicaulis* (Lowe).—It has been made quite clear by Mr. Hunt's specimens, that both this species and *T. hirta* (De Cand.) are found in the Azores. The chief character on which Mr. Lowe founded his species, is imperfectly obvious at an early stage in the growth of the fruit, and my own specimens being immature, and perhaps mingled, doubts arose in referring them to either, as mentioned in the "Catalogue."

✓ 180. Tolpis *umbellata* (Bert.)—The Azoric plant is doubtless identical with the *T. crinita* (Lowe) of Madeira; but scarcely distinct from the European *T. umbellata*.

✓ 182. Tolpis *macrorhiza* (De Cand.)—After examining numerous specimens from Mr. Hunt, I still consider that this species is an Azoric as well as a Madeira plant. Some of the specimens are referable to the *T. nobilis* (Hochst.) Besides these, there are many other forms among them, which do not well accord with either of the species here mentioned; but whether there are more than those two species, or whether all the various Azorean forms belong to one or two very variable species, I do not feel myself prepared to say. Indeed, the genus *Tolpis* (or *Schmidtia*) in the Azores, seems to be as troublesome in species and varieties, as is that of *Hieracium* in Britain.

✓ 183. Microderis *rigens* (De Cand.)—I believe it may now very confidently be stated that the *M. umbellata* (Hochst.) is identical with the *M. rigens* (De Cand.) The scape varies in being glabrous or slightly hispid, and the inflorescence is strictly neither umbellate nor corymbose; though the latter term applies well enough in most cases.

✓ 188. Bidens *leucantha* (Willd.)—"A mere variety of *B. pilosa* (Linn.)" *P. B. Webb, Esq.*

✓ 200. Senecio *Maderensis* (De Cand.)—If we take the presence or absence of stipules, as the diagnostic character between *Maderensis* and *malvæfolius*, both species occur in the Azores. Judging by the specimens, living and dried, the latter may be a more robust plant; its stem rising to three feet high, under cultivation, and being as thick as a finger near the ground.

✓ 214. Atriplex *patula* (Linn.)—This species may be held doubtful. My specimens are in an early stage, and possibly belong to A. *rosea* (Linn.)

✓ 223. Polygonum * * * ?—This is identical with the species distributed among Bourgeau's Canary plants, under the name of *Persicaria serrulata* (Moq. et Webb.) As I found it myself in two of the islands, and have since received specimens from a third, St. Michael's, while I neither found, nor have received, the *Polygonum Persicaria*, it seems probable that the species enumerated under this latter name, in Flora Azorica, may be the *Polygonum serrulatum* (Lag.), and not the Linnæan *P. Persicaria.*

✓ 222. Polygonum *maritimum* (Linn.)—The straggling habit and long internodes of the plants raised in England, which led me to suspect the identity of *P. maritimum* (Linn.) and *P. Raii* (Bab.), belong only to those of the first season; as they become older, the shorter and more bushy habit of *P.*

maritimum becomes evident. Having cultivated both species under similar conditions, I am disposed to receive them as sufficiently distinct.

226. Persea *Azorica* (Seub.)—"It is a *verisissime* Laurel. very nearly allied to *L. nobilis*, and the second species of the genus, distinguished by very few technical differences from its congener, principally the greater number of stamens, the female flower, &c. It is *Laurus Canariensis,* Webb. et Berth. Geogr. Bot. and Webb, Phytogr. Can. sect. 3, p. 227, t. 204, non Willd."—*P. B. Webb, Esq.*, in letter. Mr. Hunt thinks that there are two species under this name, in the Azores, and which are familiarly distinguished by the inhabitants.

230. Euphorbia *Styxiana* (Wats.)—Mr. Webb considers this only a large form of *E. mellifera* (Ait.) which attains an arborescent stature in the Canaries. Through the kindness of Mr. Hunt I am now in possession of several young living plants of it; and so far as can at present be seen, they tend rather to confirm than to oppose the suggestion of Mr. Webb. I intended the name to commemorate the Styx steam-vessel, not to be "Stygia."

238. Urtica *Azorica* (Hochst.)—Both Mr. Webb and Dr. Alexander pronounce this to be the *Urtica neglecta* (Guss.) Others have supposed it the *U. membranacea* (Poit.)

242. Juniperus *Oxycedrus* (Linn.?)—"This plant appears to me identical with a species I collected near Cadiz, on the sea-coast beneath the village of Barossa, (*vide* It. Hisp. p. 10,) and which I considered as *J. macrocarpa*. It is distinct from the Canarian *J. Cedrus* (Nob.) which becomes a fine tree, with pendulous branches, like those of the Goa Cedar."—*P. B. Webb, Esq.* The Azoric Juniper also becomes a tree, with a short stem, from one to two feet in diameter, and often with the branchlets elegantly pendulous.

252. Potamogeton *natans* (Linn.)—This, and perhaps n. 253 ("*P. heterophyllus*, Linn.?") also, may be really *P. fluitans* (Roth.)

✓ 254. Luzula *purpurea* (Wats.)—Quite different from n. 152 of Bourgeau's Canary plants, distributed under the name of *L. purpurea* (Link.) and *L. Berthelotii* (Nees). The specimens from Bourgeau approximate more closely to *Luzula elegans* (Lowe); and if the specific name "purpurea" is rightly applied to those specimens, it cannot be retained for the Azoric species.[*] For a specific name to this latter, we must either adopt the inconveniently long "*purpureo-splendens*" of Seubert, or my own earlier one of "*Azorica*," which I proposed in this Journal, in 1843, (and used on my labels) instead of the incorrectly applied "*elegans*." I may refer to the 'Catalogue' for further explanations.

✓ 284. Setaria *verticillata* (Beauv.)—Mr. Hunt has fully confirmed this as an Azoric plant, by sending dried specimens of it from St. Michael's. It also came up in earth sent at the roots of other things from the same island.

✓ 293. Deyeuxia *Azorica* (Hochst.) — Dr. Charles Lemann pronounces my n. 293 to be *Piptatherum multiflorum* (Beauv.) It may still be the *D. Azorica* as well.

✓ 298. Agrostis *pallida* (De Cand. ?)—The same excellent botanist considers my n. 298 to be certainly the *Deyeuxia cæspitosa* (Hochst.); as, indeed, was suggested in the 'Catalogue.' It seems doubtful, however, whether either of these two plants should be placed in the genus *Deyeuxia*.

✓ 308. Bromus *mollis* (Linn.) *var.*—This variety (or, possibly, species) has now been raised four successive years in England, and preserves its peculiarities quite unchanged. But it is difficult to describe its differences on paper, compared with the ordinary state of *B. mollis*. The dense panicle, longer hairs, and more oblong form of the spikelets, give an eyesight distinction, but scarcely a describable one.

✓ 310. Brachypodium *sylvaticum* (Beauv.)—Both the glabrous and pubescent varieties have been sent from St. Michael's by Mr. Hunt.

✓ 331. Nephrodium *Fœnisecii* (Lowe.)—The typical form ("*alatum*" Lowe) is now clearly ascertained to be identical with *Aspidium dilatatum* var. *recurvum* (Bree, in Mag. Nat.

Hist. 1831), which is the *Lastrea recurva* (Newm.) of the present day, among English botanists. The identity having been pointed out to Mr. Newman, he announced the fact in the Phytologist for May, 1846. Mr. Webb independently arrived at the same conclusion about the same time, and mentioned it to me by letter, dated June 3, 1846. The oblong variety ("*productum*" Lowe) may be a distinct species, as is believed by Mr. Newman; but it appears nearer to *Lastrea recurva*, than to the *Lastrea multiflora* (Newm.), which is the *L. dilatata* of other English authors. It will be seen from the 'Supplementary List,' that this latter species has also been found in the Azores by Mr. Hunt. If that zealous botanist would collect a number of these Lastreas, it is far from improbable that we should make out more than these two species in the Azores.

✓ 345. Ophioglossum *vulgatum* (Linn.)—My specimens, collected in Flores, differed so very little from some English examples of *O. vulgatum*, that I referred them to this species; although they may be *O. Lusitanicum* equally. But I somewhat hastily assumed, that the *Ophioglossum* of the Flora Azorica must be the same species with that from Flores. Having since received from Mr. Hunt a few St. Michael's specimens of a diminutive *Ophioglossum*, producing several narrowly lanceolate fronds from the same rhizoma, I cannot doubt that this is identical with the *Ophioglossum* from Terceira, described in Flora Azorica, under name of "*O. polyphyllum* (A. Braun !)" I trust Mr. Hunt will ascertain whether this small species or variety can be traced up to the larger *O. Lusitanicum* or *vulgatum*, by intermediate forms, or whether it is always diminutive in St. Michael's, and regularly produces several leaves, barren and fertile, from a single root.

3. *Species enumerated in the Flora Azorica; but of which I have seen no specimens.*

✓ Nigella arvensis, *L.*
✓ Chelidonium majus, *L.*

✓ Fumaria officinalis, *L.*
✓ Nasturtium flexuosum, *Seub.*
✓ Alyssum maritimum, *L.*
✓ Hypericum perforatum, *L.*
? H. decipiens, *Wats.*
✓ Ervum Lens, *L.*
✓ Trifolium lappaceum, *L.*
✓ Lotus Creticus, *L.*
✓ ? L. macranthus, *Lowe.*
✓ Medicago lupulina, *L.*
✓ M—— pentacycla, *De Cand.*
✓ Potentilla anserina, *L.*
✓ Poterium Sanguisorba, *L.*
✓ Illecebrum verticillatum, *L.*
✓ Petroselinum sativum, *Hoffm.*
✓ Pimpinella dichotoma, *L.*
Kundmannia Sicula, *De Cand.*
✓ ? Petroselinum Seubertianum, *Wats.*
✓ Galium Mollugo, *L.*
✓ Scabiosa neglecta, *Hornem.*
✓ ? S. nitens, *R. et S.*
✓ Vaccinium Maderense, *Link.*
✓ V—— longiflorum, *Wickst.*
✓ ? V. cylindraceum, *Sm.*
✓ Cicendia filiformis, *Reich.*
✓ Erythæa latifolia, *Sm.*
✓ ? E. Centaurium, *Pers.*
✓ Myosotis stricta, *Link.*
✓ Origanum Creticum, *L.*
✓ ? O. virens, *Link.*
✓ Lycopersicum esculentum, *Dun.*
✓ Euphrasia officinalis, *L.*
✓ Linaria Sieberi, *Reich.*
✓ L—— cirrhosa,
✓ ? L. Græca, *Chav.*
✓ Tolpis barbata, *Gaert.*

✓ Gnaphalium Pensylvanicum, *Willd.*
✓ Chrysanthemum pinatifidum, *L.*
✓ Senecio pseudo-elegans, *Less.*
✓ Calendula officinalis, *L.*
✓ ? C. arvensis, *L.*
✓ Plantago media, *L.*
✓ ——— Lagopus, *L.*
✓ Chenopodium rubrum, *L.*
✓ Rumex strictus, *Link.*
✓ Polygonum Persicaria, *L.*
✓ ? P. serrulatum, *Lagasc.*
✓ Ricinus communis, *Lam.*
✓ Urtica Lowei, *Seub.*
✓ Scilla maritima, *L.*
✓ Ruscus androgynus, *L.*
✓ Lemna minor, *L.*
✓ Potamogeton pectinatus, *L.*
✓ Juncus maritimus, *L.*
✓ Scirpus maritimus, *L.*
✓ Carex rigidifolia, *Hochst.*
✓ Arundo brevis, *Roth.*
✓ Poa loliacea, *Huds.*
✓ Allantodea axillaris, *Kaulf.*
✓ Adiantum Capillus Veneris, *L.*

In addition to the numerous specimens sent on different occasions by Mr. Hunt, both to myself and to the Botanical Society of London, I also received some others from Dr. Mackay, English vice-consul at Flores; and Mr. Sansom has shown me some few which had been brought to him from St. Michael's. But I have not yet been able to see Azoric examples of any of the above species enumerated in the Flora Azorica; some of which may be not truly native, (Ex.: *Chelidonium majus*, *Petroselinum sativum*,) while others may have been published under incorrect names, (Ex.: *Hypericum perforatum*, *Kundmannia Sicula*,) and others, again, are confessedly garden plants, (Ex.: *Lycopersicum esculentum, Ruscus androgynus.*) By thus printing a list of such species, I may call the attention of Mr. Hunt and other botanists more particularly to them, and so eventually lead to their confirmation or rejection in any future Flora of the Islands.

ALGÆ TASMANICÆ: *being a Catalogue of the Species of* ALGÆ *collected on the shores of* TASMANIA *by* Ronald Gunn, Esq., Dr. Jeannerett, Mrs. Smith, Dr. Lyall, *and* Dr. J. D. Hooker; *with characters of the new species, by* J. D. HOOKER, M.D., *and* W. H. HARVEY.

In the 3rd. vol. of this Journal, p. 430 et seq., Dr. Harvey described a considerable number of the species now to be enumerated. Since the publication of his paper much time has elapsed, and other collections have reached us, which afforded several new species, whose characters are here given. Full descriptions of the whole, with figures of several of the more interesting, have further appeared in Dr. Harvey's "NEREIS AUSTRALIS," in the press.

Ser. I. RHODOSPERMEÆ, or FLORIDEÆ.

Fam. 1. RHODOMELEÆ, *J. Ag.*

1. Claudea *elegans*, Lam.—*Harv. l. c. p.* 430.

HAB. George Town, *Mr. Gunn.*

2. Dictymenia *tridens*, Grev.—*Harv. l. c. p.* 430. *Ner. Austr. t.* 7.

HAB. George Town, *Mr. Gunn.*

3. Dictymenia *conferta*, Harv.—*Fucus confertus, Br. in Turn. Hist. t.* 184. *Delesseria conferta, Ag. Sp. Alg.* 1. *p.* 177. Harv. Ner. Austr. t. 8.

HAB. Tasmania, *Mr. Gunn.* A single specimen.

4. Pollexfenia *pedicellata,* Harv. l. c. p. 431. Harv. Ner. Austr. t. 5.

HAB. George Town, *Mr. Gunn.*

JEANNERETTIA, Hook. fil. et Harv.

Frons prolifera. *Phyllodia* plana, membranacea, costa evanescenti percursa, striis curvatis e costa ad marginem oblique proficientibus notata, e cellulis quadratis coloratis formata. *Ceramidia* ignota. *Stichidia* lanceolata fasciculata per totam frondem dispersa, tetrasporas duplici serie foventia.—Alga Australasica, *speciosa, purpurea, foliacea, phyllodiis lobatis.*

5. Jeannerettia *lobata,* Hook. fil. et Harv. in Harv. Ner. Austr. p. 20. t. 4.

HAB. Port Arthur, *Dr. Jeannerett.*

6. Lenormandia *marginata,* Hook. fil. et Harv.; phyllodiis tenui-membranaceis lato-lineari-oblongis obtusissimis subemarginatis ciliatis, e margine limboque proliferis, stichidiis marginalibus sparsisque, nervo tenui.—*Harv. Ner. Austr. p.* 19. *t.* 2.

HAB. Mouth of the Tamar, *Mr. Gunn.*

7. Polyphacum *Smithiæ,* Hook. fil. et Harv.; phyllodiis anguste linearibus basi cuneatis obtusissimis subemarginatisve ramulis lanceolatis simpliciusculis minutis obsitis, stichidiis solitariis pedicellatis corymboso-multipartitis secus marginem frondis ordinatis.—*Harv. Ner. Aust. p.* 17. *t.* 3.

8. Polyzonia *incisa,* J. Ag. in Linn. 15. p. 24.

HAB. Tasmania, parasitical on various Algæ; common.

9. Polysiphonia *Hookeri,* Harv. Ner. Aust. p. 40. t. 12. Pol. acanthophora, *Harv. in Lond. Journ. Bot.* 3. *p.* 441. (*not of Kütz.*)

HAB. George Town, *Mr. Gunn.*

10. Polysiphonia *Hystrix,* Hook. fil. et Harv.; fronde setacea cartilaginea inarticulata vage ramosa vel subdichotoma, ramis majoribus distantibus secundis alternisve longissimis arcuatis parum divisis, minoribus patentibus similibus, omnibus per totam longitudinem ramulis multifidis

onustis, ramulis articulatis brevissimis subulatis junioribus basi tantum spinulosis adultis glomerato-spinosissimis apiculatis, articulis diametro sublongioribus bistriatis.—*Harv. Ner. Austr. p.* 41. *t.* 14.

HAB. Tasmania, *Mr. Gunn.*

11. Polysiphonia *frutex*, Harv. Lond. Journ. Bot. l. c. p. 439.

HAB. Tasmania, *Mr. Gunn.*

12. Polysiphonia *fuscescens*, Harv. l. c. p. 439.

HAB. Tasmania, *Mr. Gunn.*

13. Polysiphonia *cancellata*, Harv. l. c. p. 440. Ner. Austr. t. 15.

HAB. Very common; parasitical on *Sargassum paradoxum*, &c.

14. Polysiphonia *mollis*, Hook. fil. et Harv.; frondibus articulatis pellucidis basi setaceis mox capillaribus supra tenuissimis flaccidis gelatinosis, caule irregulariter dichotomo decomposite ramosissimo, ramis ramulisque gradatim tenuioribus erecto-patentibus, axillis acutis, ceramidiis numerosissimis ovatis, articulis bistriatis inferioribus diametro æqualibus mediis duplo-triplove ultimis sesqui-subduplo longioribus. *Harv. Ner. Austr. p.* 43.

HAB. Parasitical on the larger Algæ, *Mr. Gunn.*

15. Polysiphonia *versicolor*, Hook. fil. et Harv.; majuscula, coccinea madefacta aurea, fronde e filis repentibus orta ramosissima setacea parum attenuata, caule indiviso furcatove per totam longitudinem ramis lateralibus ramulisque subulatis onusto, ramis patentibus simplicibus v. divisis, ramulis simplicibus subacutis patentibus alternis secundisve subdistichis, articulis diametro sesquilongioribus, siphonibus subdecem, ceramidiis infra apices ramulorum sessilibus ovatis. *Harv. Ner. Austr. p.* 48. *t.* 16.

HAB. Tasmania, *Mr. Gunn.*

16. Polysiphonia *monilifera*, Hook. fil. et Harv.; majuscula, coccinea, fronde (e filis repentibus orta?) capillari flaccida decomposite ramosa, caule parum diviso ramis lateralibus ramulisque filiformibus ornato, ramis alternis v. sæpe secundis erecto-patentibus simplicibus, ramulis simplicissimis

capillaceis gracilibus secundis alternisve, articulis diametro subtriplo longioribus, siphonibus 10-12, tetrasporis elongatis juxta ramulorum basin in seriem moniliformem ordinatis magnis internis rubris. *Harv. Ner. Austr. p.* 49. *t.* 16.

17. Polysiphonia *ericoides*, Harv.; pusilla, fronde e filis repentibus orta, erecta articulata parum ramosa, ramulis subulatis simplicibus quadrifariis imbricatis densis vestita, ramis similibus, articulis diametro triplo brevioribus multistriatis, siphonibus 16, geniculis omnibus hyalinis. *Harv. Ner. Austr. p.* 50.

HAB. Tasmania, *Rev. Mr. Ewing.*

18. Polysiphonia *cladostephus*, Mont.—P. byssoclados, *Harv. l. c. p.* 436.

HAB. Tasmania; very common. Parasitical on *Sargassa.*

19. Dasya *Gunniana*, Harv. Ner. Aust. t. 17.—Pol. Gunniana, *Harv. l. c. p.* 437.

HAB. George Town, *Mr. Gunn.*

20. Dasya *Laurenciana*, Harv. Ner. Austr. t. 18.—Pol. Laurenciana, *Harv. l. c. p.* 438.

HAB. George Town, *Mr. Gunn.*

21. Dasya *capillaris*, Hook. fil. et Harv.; punicea, cæspitosa, caulibus capillaribus intricatis perflaccidis sensim attenuatis decomposite ramosis, ramis primariis basi inarticulatis pluries alterne ramosis, ramulis multifidis in fila arachnoidea tenuissima dichotoma desinentibus, articulis ramorum diametro 3-5-plo, ramellorum multiplo longioribus, stichidiis pedicellatis lanceolatis attenuatis.—*Harv. Ner. Aust. p.* 60. *t.* 19.

HAB. Tasmania, *Mr. Gunn.*

22. Dasya *villosa*, Harv. l. c. p. 433. Ner. Austr. t. 20.

HAB. George Town, *Mr. Gunn.*

33. Dasya *naccarioides*, Harv. l. c. p. 432. Ner. Austr. t. 22.

HAB. George Town, *Mr. Gunn.*

24. Dasya *verticillata*, Harv. l. c. p. 434. Ner. Austr. t. 24.

HAB. George Town, *Mr. Gunn.*

25. Dasya *bolbochæte*, Harv. c. p. 434. Ner. Austr. t. 25.

Hab. George Town, *Mr. Gunn.*

26. Dasya *hormoclados,* J. Ag. in Linn. 15. p. 32. Harv. Ner. Austr. *ined.*

Hab. George Town, *Mr. Gunn.* The Tasmanian specimens are much larger and more luxuriant than those described by Agardh, which we have examined in the Herbarium of Senator Binder, of Hamburgh, but otherwise the same.

27. Dasya *ceramioides,* Harv. l. c. p. 435. Ner. Austr. *ined.*

Hab. George Town, *Mr. Gunn.*

Fam. 2. Chondrieæ, *J. Ag.*

28. Cladhymenia *Gunnii,* Harv.—Laurencia ? membranacea, *Harv. l. c. p.* 443.

Hab. George Town, *Mr. Gunn.*

29. Laurencia *elata,* Harv.—L. pinnatifida, β. elata, *Ag. Sp. Alg.*

Hab. Tasmania, *Mr. Gunn, Dr. Jeannerett,* &c.—A common form in Tasmania, perhaps worthy of specific distinction. The frond is 12-18 inches high, 3-4 times pinnated, and becomes a fine pinky red in fresh water.

30. Laurencia *obtusa,* Lamour.—*Harv. l. c. p.* 444.

Hab. Tasmania, *Mr. Gunn.*

31. Laurencia *botryoides,* Gaill.—*Harv. l. c. p.* 444.

Hab. Tasmania, *Mr. Gunn.*

32. Laurencia *papillosa,* Grev.—*Harv. l. c. p.* 444.

Hab. Tasmania, *Mr. Gunn.*

33. Laurencia *Forsteri,* Grev.

Hab. Tasmania, *Mr. Gunn.*

34. Laurencia *dasyphylla,* Grev.—*Harv. l. c. p.* 444.

Hab. Tasmania, *Mr. Gunn.*

35. Laurencia *tenuissima,* Grev.—*Harv. l. c. p.* 444.

Hab. Tasmania, *Mr. Gunn.*

36. Laurencia *fusifolia,* Hook. fil. et Harv.; fronde circumscriptione conico-ovata dense ramosa robusta, caule indiviso v. vage ramoso, ramis lateralibus crebris alternis quadrifariis basi et apice attenuatis simplicibus pinnatis

bipinnatisve, pinnulis fusiformibus plus minus attenuatis obtusiusculis.

Hab. Sullivan's Cove, *Dr. Lyall.*—Dr. Lyall's specimens, of which we have seen but two, are young, and possibly, at a later period of growth, would have presented a very different aspect. They are much more robust than L. *tenuissima*, with the branches and ramuli remarkably fusiform, but may possibly be connected with that species.

37. Delisia *elegans*, Hook. fil. et Harv. — Bonnemaisonia elegans, *Ag. Sp. Alg.* 1. *p.* 198. *Harv. l. c. p.* 442.

Hab. Tasmania, *Mr. Gunn.*

38. Lictoria *taxiformis*, J. Ag. in Linn. 15. p. 22.—Asparagopsis Delille, *Mont. Fl. Can. p.* 8. *t.* 6. Chondria taxiformis, *Ag. Sp.* 1. *p.* 368.

Hab. Tasmania, *Mr. Gunn*, (1283.)—A very widely distributed plant, being found in the Mediterranean, at the Canary Islands, and on the S. American coast, as well as in Tasmania. Mr. Gunn's specimens are remarkably fine.

39. Champia *Tasmanica*, Harv. l. c. p. 407. t. 19.

Hab. Port Arthur, *Mrs. Smith;* Circular Head, *Mr. Gunn.*

40. Chyloclodia *Tasmanica*, Harv. l. c. p. 444.

Hab. Tasmania, *Mr. Gunn.* Perfect specimens are still wanting to complete the history of this species.

41. Chylocladia *affinis*, Hook. fil. et Harv.; majuscula, caule distincto subsimplici; ramis ramulisque articulato-constrictis oppositis v. verticillatis sparsisve elongatis iterum divisis, articulis ramulorum diametro brevioribus, ceramidiis magnis ovatis. *C. kaliformis, Harv. l. c. Excl. Syn.* —var. β. *arcuata;* ramis ramulisque sparsis arcuatis apice sæpe hamatis.

Hab. George Town, *Gunn.*—Nearly related to C. *kaliformis*, which it greatly resembles, but from which it is essentially distinguished by the differently shaped ceramidia, which are also, proportionably, much larger. β. is a remarkable variety, distinguished by its arching branches, whose tips curl round other *Algæ* in their neighbourhood.

42. Chrysimenia *clavellosa*, J. Ag.

Hab. Sullivan's Cove, *Dr. Lyall;* George Town, *Mr. Gunn.*

Fam. 3. Delesserieæ, *J. Ag.*

43. Delesseria *crassinervia*, Mont.

Hab. Sullivan's Cove, *Dr. Lyall.*

44. Delesseria *endiviæfolia*, Hook. fil. et Harv.; fronde lineari vage dichotoma membrana crispatissima alata, margine lobato, lobis demum dichotomo-multifidis obtusis, soris in lobulorum apicibus sparsis circularibus.

Hab. Tasmania, *R. Gunn. Esq.*—A very distinct species, having many essential characters in common with D. *alata*, but immediately distinguished by the excessively curled and finally lobed margin. The frond is 6-8 inches high, or more, with a strong costa, which gradually becomes faint in the younger segments.

45. Delesseria (Hemineura) *frondosa*, Hook. fil. et Harv.; fronde tenui-membranacea late ovata pinnatifida v. bi-tripinnatifida, pinnulis lobatis obtusis subserratis, costa angustissima interrupta basi et apice laciniarum evanescente, coccidiis conico-cornutis in costa loborum sessilibus solitariis, soris marginalibus sparsis. *Nitophyllum uninerve, Harv. in Herb.*

Hab. Tasmania, *Mr. Gunn.*—This is a remarkable plant in many respects, and possibly may become the type of a new genus, for which we would propose the name *Hemineura*, in allusion to the curious interruption in the *costa* of the frond, which becomes obsolete toward the base and apex of all the lobes, primary as well as secondary. The form of the conceptacles is also singular. We are not sufficiently acquainted with D. *interrupta*, Ag., and are unable to say whether it should rank in the same group with this or not.

46. Nitophyllum *affine*, Harv. l. c. p. 447.

Hab. Tasmania, *Mr. Gunn.*

47. Nitophyllum *punctatum*, Grev.—*Harv. l. c. p.* 446.

Hab. Tasmania, *Mr. Gunn.*

48. Nitophyllum *Gunnianum*, Harv.; fusco-purpurea (?) sic-

citate fuscescens, fronde latissima basi crassiore stipitata avenia flabellatim fissa, laciniis lato-cuneatis plus minus furcatis incisisque, margine minute eroso-crispatulo, soris minutis puctiformibus densissime apicem versus sparsis.—*Harv. in Herb.* 1840.

Hab. Tasmania, *Mr. Gunn.*—*Frond* 8-12 inches or more in expansion, with a very short stem, which is rapidly dissolved into the thickened, but veinless, base of the leaf. *Colour* in the dry state a deep brown, probably a dull purple when recent.

49. Nitophyllum *multipartitum,* Hook. fil. et Harv.; fronde stipitata flabelliformi multipartita, laciniis angustis linearibus dichotomis obtusis, margine plane integro ciliatove, soris minutis punctiformibus densissime apicem versus sparsis.—*Nitophyllum, n. sp. Harv. l. c. p.* 446.

Hab. George Town, *Mr. Gunn;* Sulivan's Cove, *Dr. Hooker.*

50. Plocamium *procerum,* nobis.—Thamnophora procera, *J. Ag. in Linn.* 15. *p.* 10.

Hab. Tasmania, *Mr. Gunn,* &c.

51. Plocamium *costatum,* nobis.—Thamnophora costata, *J. Ag. l. c. p.* 10.

Hab. Tasmania. We fear that T. *Cunninghamii,* Grev., can only be considered a narrow variety of this species.

52. Plocamium *angustum,* nobis.—Tham. angusta, *J. Ag. l. c. p.* 10.

Hab. Tasmania. Very common.

53. Plocamium *coccineam,* var. *flexuosum,* nobis; fronde valde flexuosa subdichotoma fulcris hamatis hic illic instructa, ramis elongatis, ramulis angustissimis fere capillaribus.

Hab. Tasmania, *Mr. Gunn,* (1335). This has a very peculiar aspect, owing to the great difference in breadth between the branches, and the pectinate ramule which they bear; but the ramulification is essentially the same as that of the common state of P. *coccineam,* which every one allows to be a very variable species.

Fam. 4. Sphærococcoideæ, *J. Ag.*

54. Rhodymenia (Calophyllis) *coccinea,* Harv.—Sphærococcus australis, *Harv. l. c. p.* 445.

Hab. Tasmania, *Mrs. Smith* and *Mr. Gunn.* I am obliged to alter the specific name, as there is another R. *australis,* Sond., a different species.

55. Rhodymenia (Calophyllis) *Lamberti,* Grev.

Hab. Tasmania, *Mr. Gunn.* A single specimen only.—This is a very little understood plant, and known to few; the specimens which commonly pass under this name belonging very frequently to R. *variegata,* which greatly resembles it, but which is a thinner and more membranous species.

46. Rhodymenia (Calophyllis) *fimbriata,* Hook. fil. et Harv.; fronde purpurea tenuissime membranacea venulis ramosis tenuissimis percursa flabelliformi profunde laciniata, laciniis cuneatis vage furcatis, margine ramentis creberrimis pusillis dentatis polymorphis fimbriato, apicibus laceris.

Hab. George Town, *Mr. Gunn,* (1328.)—This has strikingly the habit of R. *Hombroniana,* but a much thinner frond, composed of fewer layers of cells, and the system of internal veinlets, resembling those of *Pollexfenia pedicellata,* distinguish it from any state of that species. Unfortunately the fruit is unknown.

57. Rhodymenia *corallina,* Grev.?

Hab. Port Arthur, *Dr. Jeannerett.* Imperfect specimens.

58. Rhodymenia *palmata,* var. *Sarniensis,* Grev.

Hab. Port Arthur, *Dr. Jeannerett, Dr. Lyall.*

59. Rhodymenia *membranacea,* Harv.—Halymenia membranacea, *Harv. l. c. p.* 448.

Aab. Tasmania, *Mr. Gunn.*

60. Gracilaria *lichenoides,* Grev.?—*Harv. l. c. p.* 445.

Hab. Tasmania, *Mr. Gunn.* Imperfect specimens.

61. Hypnea (Dicranema) *furcellata,* nobis; fronde compressa pluries dichotoma, axillis angustis rotundatis, ramis erectis, apicibus obtusis.

Hab. Port Arthur, *Dr. Jeannerett;* Tasmania, *Rev. Mr. Ewing.*

62. Hypnea *charoides,* Lamour.

Hab. Tasmania, *Mr. Gunn,* 1314.

63. Hypnea *divaricata,* Grev.?

Hab. Port Arthur, *Dr. Jeannerett.*—The specimens are scarcely sufficient to determine the species.

64. Hypnea *episcopalis,* Hook. fil. et Harv.; fronde coccinea parum divisa, ramis primariis elongatis, secundariis lateralibus crebris basi attenuatis apice subulatis sæpissime nudis hamatis, ramulis longiusculis erectis basi et apice attenuatis.

Hab. Tasmania, *Mr. Gunn.*—Probably a large growing species, but our specimens are not very perfect.

Fam. 5. CRYPTONEMEÆ, *J. Ag.*

65. Dasyphlæa *Tasmanica,* Hook. fil. et Harv.; caule crasso subindiviso, ramis lateralibus creberrimis patentibus basi et apice subattenuatis obtusis, ramulis densis quadrifariis iterum ramulosis anguste-linearibus vix attenuatis, ramulis fructiferis perbrevibus fusiformibus.

Hab. Tasmania, *Mrs. Smith.*—We have only seen a single specimen of this plant, which is very different in appearance from the figure given by M. Montagne of his D. *insignis;* but in every essential character there is a close affinity.

66. Ctenodus *Billardieri,* Kutz.

Hab. Tasmania, very common.

67. Melanthalia *abscissa,* Mont.

Hab. Port Arthur, *Dr. Jeannerett.*

68. Iridæa *micans,* Bory. (?)

Hab. Sandy Cove, *Dr. Lyall.*—Imperfect scraps only, of what may be this species.

69. Gelidium *glandulæfolium,* nobis; radice ramosa, fronde filiformi angustissima elata vage pinnatim v. flabellatim ramosa flexuosa, pinnis distantibus oppositis aut alternis nunc apicem ramorum versus fasciculatis flagelliformibus

longissimis simplicibus furcatisve attenuatis, ramulis setiformibus plus minus vestitis, setis brevibus patentibus crebris subulatis clavatisque apice fructiferis.

HAB. Circular Head, *Mrs. Smith.*—A very beautiful and distinct species.

70. Gelidium *corneum*, var. *crinale.*

HAB. Tasmania.

71. Ginannia *furcellata*, Mont.

HAB. George Town, *Mr. Gunn.*

72. Acropeltis *phyllophora*, nobis; caule (vix noto) filiformi ramoso, ramis flabelliformibus planis basi obsolete costatis pluries dichotomis, laciniis linearibus sæpe proliferis, axillis rotundatis, margine integerrimo, peltis terminalibus.

HAB. Port Arthur, *Dr. Jeannerett.*—The habit of this is very similar to that of *Rhodymenia flabelliformis*, or R. *corallina*, but the structure is different, and the fructification resembles that of the typical species.

73. Gigartina *livida*, Grev.

HAB. Sandy Cove, *Dr. Lyall, Dr. Hooker.*

74. Gigartina *acicularis*, var. *pinnata.*

HAB. Sandy Cove, *Dr. Lyall.*—More branching, and more regularly pinnated than the European form, and possibly distinct; but without seeing more numerous specimens we are unwilling to multiply species.

75. Gigartina *chondroides*, nobis; livida, fronde stipitata apice flabellatim ramosa disticha cartilaginea, ramis planocompressis linearibus basi cuneatis pluries dichotomis patentibus fastigiatis, axillis latissime rotundatis, apicibus obtusis.

HAB. Sandy Bay, *Dr. Lyall.*—In habit this closely resembles the narrow form of *Chondrus crispus*, but the structure is widely different, and exactly similar to that of G. *livida*, from which it differs in ramification.

MYCHODEA, *Nov. Gen.*

Frons cylindracea, carnoso-membranacea, intus lacunis magnis ellipticis vacuis alveata, tota e filis tenuissimis axin versus

densioribus reticulatim anastomosantibus intricatis constituta, peripheriam versus in fila brevissima moniliformia desinentibus. *Tetrasporæ* zonatim partitæ, inter fila peripherica nidulantes, per frondem dispersæ.—Algæ Australasicæ, *fusco-rubescentes, membranaceæ, decomposite ramosæ;* ramis *pluries alterne divisis.*

67. Mychodea *carnosa,* nobis; fronde carnosa flacca ramosissima, ramis horizontalibus flexuosis crassis pluries divisis, minoribus setaceis filiformibus acutis, ramulis paucis subulatis; lacunarum parietibus crassis.

HAB. Tasmania, *Mr. Gunn.*

77. Mychodea *membranacea,* nobis; fronde membranacea elata ramosissima ramis patentibus sensim attenuatis pluries divisis minoribus subdichotomis, axillis rotundatis, ramulis elongatis attenuatis acuminatis; lacunarum parietibus tenuibus.

HAB. George Town, *Mr. Gunn.*—Greatly resembling the former in general habit, but here the walls of the internal cavities or lacunæ are membranaceous and thin, though the membrane is traversed by filaments. In M. *carnosa* they are much more gelatinous, very thick, supported by a large network of filaments.

RHABDONIA, *Nov. Gen.*

Frons membranacea, filiformis, ramosissima, e filis longitudinalibus intertextis ramosis anastomosantibus frondem percurrentibus extus in strato cellulari peripherico desinentibus formata; cellulæ periphericæ interiores magnæ uni-pluriseriatæ, exteriores coloratæ minores, uniseriatæ. *Tetrasporæ* oblongæ, zonatim partitæ, inter cellulas exteriores nidulantes.—Algæ Australasicæ, *graciles, purpureæ, pluries alterne ramosa;* ramis *virgatis.*

78. Rhabdonia *coccinea,* Harv.; fronde purpurea demum coccinea ultra setacea decomposite ramosa pyramidali ovatove, ramis virgatis iterum divisis erecto-patentibus, ramulis erectis basi angustatis acutis.—*Chrysimenia coccinea, Harv. l. c. p.*

HAB. George Town, *Mr. Gunn*, 1301.

79. Rhabdonia *nigrescens*, nobis ; fusco-rubra, siccitate nigrescens, fronde setacea decomposite ramosissima rigida, ramis iterum divisis erecto-patentibus, ramulis basi angustatis acutis.

HAB. Tasmania, *Mr. Gunn*.—A more slender, and far more rigid plant than the last, and of a much darker colour ; but in other respects nearly allied. Their aspect is very different, and yet it is not easy to fix on a good specific distinction.

Fam. 6. CERAMIEÆ, *J. Ag.*

80. Thamnocarpus *Gunnianus*, Harv. in Hook. Ic. Pl. t. 662.

HAB. Port Arthur, *Mr. Gunn*.

81. Thamnocarpus ? *Laurencia*, nobis ; purpureo-coccinea, fronde cartilaginea filiformi basi cylindracea apicem versus subcompressa ramosissima, ramis alternis erecto-patentibus distichis iterum divisis ramulis lanceolatis.

HAB. George Town, *Mr. Gunn*.—Until the fruit of this plant be observed, its position must be considered doubtful. The structure of the stem is very similar to that of the *Thamnocarpi*.

82. Thamnocarpus *Ptilota*, nobis ; fronde plano-compressa lineari costata vage pinnatim composita disticha, ramis erectis ancipitibus pinnatis bipinnatisve, pinnulis basi vix angustatis erectis falcato-incurvis sæpe secundis, glandulis marginalibus, favellis pedicellatis minutis involucratis, involucri ramulis simplicibus incurvis.

HAB. Port Arthur, *Dr. Jeannerett, Dr. Lyall*. In habit this greatly resembles a *Ptilota*, especially P. *corallina* ; but the structure of the stem is different ; in the fructification there is very little difference.

83. Ptilota *articulata*, J. Ag. in Linn. p. 36.

HAB. Tasmania, *Mr. Gunn*.

84. Spyridia *filamentosa*, Harv. l. c. p. 449.

HAB. Tasmania, common, *Mr. Gunn*.

85. Ceramium *rubrum*, Ag.—*Harv. l. c. p.* 449.

HAB. Tasmania, common.

86. Ceramium *Deslongchampsii*, Gaill.

HAB. Tasmania, *Mr. Gunn.*

87. Ceramium *nodosum*, Kutz.—C. diaphanum var., *Harv. l. c. p.* 449.

HAB. Tasmania, *Mr. Gunn.*

88. Ceramium *ramulosum*, nobis; fronde capillari sensim attenuata dichotoma, axillis inferioribus distantibus superioribus approximatis, ramis ad fere omnia articula ramulos tenues breves patentes simplices furcatosve emittentibus, apicibus strictis acutis; articulis inferioribus diametro 3-4-plo longioribus, zoni distinctis angustis, interstitiis pellucidis elongatis; tetrasporis unilateralibus erumpentibus; favellis subterminalibus involucro polyphyllo subtensis.

HAB. Tasmania, *Mr. Gunn.* Nearly allied to C. *nodosum.*

89. Ceramium (Echinoceras) *monile*, nobis; fronde setacea elata dichotoma moniliformi, ramulis lateralibus tenuicapillaribus pluris dichotomis fastigiatis, apicibus patentibus obtusis, articulis inferioribus diametro duplo longioribus zonis decurrentibus interstitiisque angustissimis, mediis superioribusque zonis distinctis interstitiisque diametro equalibus, aculeis paucissimis brevissimis biarticulatis in ramulis ultimis solitariis unilateralibus externis; tetrasporis solitariis inarticulis turgidis aculeatis immersis; favellis involucro polyphyllo subtensis.

HAB. Tasmania, *Mr. Gunn.*—With the size and much of the habit of C. *rubrum*, this species approaches C. *acanthonotum* in character. It is a very handsome and distinct plant.

90. Ballia *Brunonis*, Harv.

HAB. Tasmania, *Mr. Gunn*, &c.

91. Wrangelia *plumosa*, Harv. l. c. p. 450.

HAB. George Town, *Mr. Gunn.*

92. Wrangelia *crassa*, nobis; fronde pellucide articulata crassa pinnata v. bipinnata, pinnis pinnulisque oppositis e quoque geniculo ramellos binos oppositos pinnatim com-

positos emittentibus, articulis ramorum diametro triplo ramellorum sextuplo longioribus.

Hab. Tasmania, *Mr. Gunn.*—Allied to W. *multifida*, but the diameter of the frond is thrice as great, and the ramelli proportionably thicker.

93. Wrangelia *comosa*, Harv.—Callithamnion? comosum, *Harv. l. c. p.* 451.

Hab. George Town, *Mr. Gunn.*—The *favellæ* of this plant are involucrate, but not terminal. In this last respect, therefore, it departs from the character of the typical species.

94. Wrangelia *nobilis*, nobis; caule elato crasso opaco hirsuto bi-tripinnatim ramoso, ramis alternis virgatis, pinnis inæqualibus simplicissimis plus minus articulatis e quoque geniculo ramellos tenues binos oppositos emittentibus, ramellis purpureis pellucide articulatis monosiphoniis pinnatis subbipinnatisve strictis patentibus, articulis ramorum diametro sesquilongioribus pinnarum æqualibus brevioribusve ramellorum diametro 4-6plo longioribus.

Hab. George Town, *Mr. Gunn.*—The fruit is unfortunately a desideratum, and the genus may therefore be questioned. The habit is very similar to that of Dasya *bolbochæte*, while the structure and mode of branching are more like those of W. *comosa*, on a much larger scale. The stems are 6-12 inches long, and as thick as small twine; the ramelli 2-3 lines in length.

95. Wrangelia *Jeannerettii*, nobis; fronde ultrasetacea hirta inarticulata nodosa cartilaginea laxe pinnato-dichotoma, ramis subsimplicibus hirtis junioribus e nodis superioribus ramellos binos oppositos minutissimos crassos tri-quadripinnatos emittentibus, articulis ramellorum diametro equalibus.

Hab. Port Arthur, *Dr. Jeannerett.*—Fruit unknown. Stem 4-6 inches long, thicker than a hog's bristle, irregularly branched. Ramelli exceedingly minute, 3-4 times pinnated, very beautiful.

96. Griffithsia (Halurus) *radiciformis*, nobis; fronde crassa inarticulata opaca pinnatim bipinnatimve ramosa, ramis

filiformibus distichis sensim attenuatis ramellis brevissimis simplicibus furcatisve incurvis densissime velatis, involucris pedicellatis e foliolis dichotomis arcte conniventibus constantibus tetrasporas ad fila multifida affixa foventibus, articulis ramellorum diametro equalibus v. sesquilongioribus.

HAB. Tasmania, *Mr. Gunn.—Stems* 6-8 inches high, as thick as small twine, twice pinnated. *Colour* dark-red. It resists fresh water much better than any other species of the genus.

97. Griffithsia *setacea*, Ag.

HAB. Tasmania, abundant. *Mr. Gunn.*

98. Griffithsia *corallina,* Ag.—G. flabelliformis, Harv. l. c. p. 450.

HAB. Tasmania, *Mr. Gunn.*—We fear that the Tasmanian form, constituting the G. *flabelliformis,* Harv., is not sufficiently distinct from some European states of the species.

99. Callithamnion *pellucidum,* Harv. — Spyridia pellucida, *Harv. l. c. p.* 449.

HAB. Tasmania, *Mr. Gunn.*

100. Callithamnion *cruciatum,* Ag.—*Harv. l. c. p.* 453.

HAB. Tasmania, *Mr. Gunn.*

101. Callithamnion *Plumula,* Ag.

HAB. Tasmania, *Mr. Gunn.* Parasitical on *Lictoria taxiformis.*

102. Callithamnion *latissimum,* Harv. l. c. p. 452.

HAB. Tasmania, *Mr. Gunn.*

103. Callithamnion *angustatum,* nobis; filis capillaribus dense cæspitosis pellucide articulatis tenuibus pluries bipinnatim decomposite-ramosissimis roseis, divisuris omnibus alternis, plumulis (v. ramulis penultimis) virgatis strictis longissimis circumscriptione anguste-lanceolatis pinnatis erectis, pinnulis abbreviatis patentibus furcatis v. secunde pinnulatis, tetrasporis globosis solitariis apicem versus pinnularum sessilibus, articulis primariis diametro 6-8plo, secundariis 5plo, ultimis triplo longioribus.

HAB. Tasmania, *Mr. Gunn.*—Densely tufted, 2-4 inches long, capillary, in all parts pellucidly jointed.

Series II. MELANOSPERMEÆ, or FUCOIDEÆ.

Fam. 1. FUCEÆ.

104. Scaberia *Agardhii*, Grev. (1830).—Castraltia salicornioides, *Rich.* (1834.)

HAB. Abundant on rocks, near low water mark at George Town, *Mr. Gunn.* (1349)

105. Phyllospora *comosa*, Ag.

HAB. George Town, *Mr. Gunn.*

106. Hormoseira *Billardieri*, Mont. — Fucus moniliformis, *Labill. t.* 262.

HAB. George Town, *Mr. Gunn.*—We fear that authors make too many species in this genus.

107. Seirococcus *axillaris*, Grev.—Fucus axillaris, *Turn. t.* 146.

HAB. George Town, *Mr. Gunn.*

108. Xiphophora *Billardieri*, Mont.—Fucus gladiatus, *Labill.*

HAB. Port Arthur, *Dr. Jeannerett* and *Dr. Lyall.*

109. Fucus *confluens*, Br. (?)—*Turn. t.* 141.

HAB. Tasmania, *Dr. Lyall.*—A single very imperfect specimen, which we refer to this species with some doubt.

110. Sargassum *paradoxum*, nobis.—Fucus paradoxus, *Turn. t.* 156. Cystoseira paradoxa, *Ag.*

HAB. George Town, *Mr. Gunn.* Very common.—This plant is paradoxical in many ways. Its male receptacles, represented in Turner's figure, are cylindrical and smooth, and larger than the *females*, which are three-angled, the angles armed with conical protuberances. Mr. Gunn's specimens are numerous, and in a very perfect state, otherwise we should not venture to refer those which bear such opposite-looking receptacles to one species, and we cannot help fearing that too much stress has been laid on the *form* of the receptacles in the *Sargassa.*

111. Sargassum *Raoulianum*, nobis in Lond. Journ. 4.

HAB. Sandy Cove, *Dr. Lyall* and *Dr. Hooker.*

112. Sargassum *flaccidum*, Sond. in Bot. Zeit. 1845.

Hab. Tasmania, *Mr. Gunn.*

113. Sargassum *capillaceum*, nobis; caule compresso flexuoso pinnato bipinnatove, pinnis longissimis filiformibus apice longe attenuatis setaceis, foliis capillaribus pluries dichotomis crebris alternis superioribus in pinnulas foliosas mutatis, vesiculis globosis muticis supra axillaribus; receptaculis . . . . ?

Hab. Tasmania, *Mr. Gunn.*—Nearly related to S. *flaccidum*, but with a somewhat different habit and larger muticous vesicles. It also comes near the variety *capillifolium* of S. *pennigerum*.

114. Sargassum *heterophyllum*, Ag.

Hab. Tasmania, *Mr. Gunn.* A single, imperfect specimen.

115. Blossevillea *torulosa*, Dne.—Fucus torulosus, *Turn. t.* 157.

Hab. George Town, *Mr. Gunn.*

116. Blossevillea *retroflexa*, Dne.—Fucus retroflexus, *Labill. t.* 260. *Turn. t.* 155.

Hab. Cape Van Diemen, *Labillardière.* George Town, *Mr. Gunn.*

117. Blossevillea *retorta*, (?) Dne.—Fucus retortus, *Turn.*

Hab. Tasmania, *Mr. Gunn.*—The specimens are imperfect, and hardly sufficient.

118. Blossevillea *uvifera*, nobis; caule gracili subcylindraceo angulato subinarticulato basi nudiusculo muricato supra bipinnatim ramoso, pinnis stipitatis circumscriptione ovatis alternis pinnulatis, pinnulis crebris patentibus filiformibus pinnato-dichotomis fastigiatis laciniis erectis elongatis simplicibus, axillis rotundatis, vesiculis e pinnis primariis ortis breve pedicellatis globosis ellipticisve muticis creberrime inter pinnulas sparsis, receptaculis terminalibus lanceolatis acutis nec torulosis.

Hab. George Town, *Mr. Gunn.*—A very handsome and distinct species.

119. Blossevillea *caudata*, nobis; caule ignoto, ramis (pin-

nis?) gracilibus flexuosis compressis pinnatim compositis subarticulatis, articulis uncialibus, pinnulis patentibus alternis flexuosis pinnato-dichotomis, laciniis erectis filiformibus elongatis attenuatis simplicibus, receptaculis elongatis torulosis longe acuminatis vel in filum setaceum excurrentibus, vesiculis ellipticis muticis sparsis.

HAB. Tasmania, *Dr. Sinclair.* Sandy Cove, *Dr. Lyall.*

Fam. 8. LAMINARIEÆ.

120. Macrocystis *pyrifera,* Ag.

HAB. George Town, *Mr. Gunn.*

121. Capea *biruncinata,* Mont.

HAB. George Town, *Mr. Gunn.*

Fam. 9. SPOROCHNOIDEÆ.

122. Sporochnus *radiciformis,* Ag.—Fucus radiciformis, *Turn.*

HAB. Tasmania, *Mr. Gunn.*

123. Carpomitra *inermis,* Kutz.—Fucus inermis, *Br.*—Turn. Herb.

HAB. Tasmania, *Mr. Gunn.*

Fam. 10. DICTYOTEÆ, *Grev.*

124. Haliseris *polypodioides,* Ag.

HAB. Port Arthur, *Dr. Jeannerett.*

125. Dictyota *paniculata,* J. Ag. in Linn. 15. p. 5.

HAB. Tasmania, *Mr. Gunn.*—The ramification of the main stem and branches is somewhat pinnate; the branches furnished with lateral, alternate, dichotomo-multifid fastigiate segments, whose laciniæ are very narrow.

126. Stilophora *rhizodes,* J. Ag.

HAB. Sandy Cove, *Dr. Hooker.*

127. Stilophora? *australis,* Harv. l. c. p. 453.

HAB. George Town, *Mr. Gunn.*—Scarcely a *Stilophora,* and possibly a *Nereia,* Zanard. It would be desirable to examine a more perfect specimen.

Fam. 11. SPHACELARIEÆ, *J. Ag.*

128. Sphacelaria *hordeacea*, Harv. in Hook. Ic. Pl.
HAB. Tasmania, *Mr. Gunn.*

Series III. CHLOROSPERMEÆ, or ZOOSPERMEÆ.

Fam. 12. SIPHONEÆ, *Grev.*

129. Caulerpa *hypnoides*, Ag.—Fucus hypnoides, *Turn. t.* 173.
HAB. Tasmania, *Mr. Gunn.*

130. Caulerpa *sedoides*, Ag.—Fucus sedoides, *Turn. t.* 172.
HAB. George Town, *Mr. Gunn.* (1357.)

131. Caulerpa *Brownii*, Endl.; surculo nudo, frondibus erectis vage ramosis, ramis paucis gracilibus simplicibus ramentis cylindraceis tenuibus quadrifariis patentibus dense obsitis basi nudis.
HAB. Tasmania, *Mr. Gunn.*—A single, not very perfect specimen.

132. Caulerpa *furcifolia*, nobis; surculo vestito crasso, frondibus erectis crebris longissimis simplicissimis undique ramentis furcatis cylindraceis incurvis imbricatis mucronatis vestitis.—C. Selago, *nobis, Lond. Journ. v.* 4. (*excl. Syn.*)
HAB. Tasmania, *Mr. Gunn.* Also at New Zealand.—At first sight, this strongly resembles C. *Selago*, but is a much larger and stronger plant, with its *surculi*, as well as fronds, densely clothed with *forked* ramenta, the latter character admirably distinguishing it from every other described species.

133. Codium *tomentosum*, Stack.—*Ag. syst. p.* 177.
HAB. Common in Tasmania.

Fam. 13. CONFERVÆ.

134. Conferva *clavata*, Ag. Syst.
HAB. Tasmania, *Mr. Gunn.*

135. Conferva *valida*, nobis; filis simplicibus longissimis

ultrasetaceis crassis nitentibus membranaceis læteviridibus crispatis implexis, articulis diametro 3-5plo longioribus ad genicula constrictis.

HAB. Tasmania, *Mr. Gunn.* (1345.)—Filaments twice as thick as those of C. *crassa,* loosely bundled together, glossy but not mucous, bright green.

Fam. 14. ULVACEÆ.

136. Enteromorpha *compressa,* Grev.

HAB. Tasmania.

137. Ulva *latissima,* Linn.

HAB. Tasmania; both very common.

Contributions towards a FLORA OF BRAZIL, *being the Characters of several new species of* COMPOSITÆ, *belonging to the tribes* VERNONIACEÆ *aad* EUPATORIACEÆ, *from the Province of Goyaz ;** *by* GEORGE GARDNER, ESQ., F.L.S. *Superintendent of the Royal Botanic Gardens, Ceylon.*

(*Continued from Vol. V. p.* 491.)

VERNONIACEÆ, *Less.*

VERNONIA, *Schreb.*

Sect. LEPIDAPLOA, *DC.*

3255. V. *chrysophylla ;* tota rufo-sericeo-villosa, caulibus e rhizomate lignoso pluribus simplicibus teretibus sulcatis apice compressis subnudis, foliis sessilibus obovato-oblongis obtusis subcrenatis, cymis scorpoideis contractis oligocephalis aphyllis, capitulis 20-floris circiter, involucri campanulati squamis lineari-lanceolatis acutis 3-nervibus extus villosis, achænio dense sericeo-villoso, pappi serie exteriori internam subæquante.

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* When my former papers on these two tribes were prepared, I could not lay my hands on my Goyaz collections, the bundles containing them having been lost during my removal from England to Ceylon. I have, however, been fortunate enough to obtain, by purchase, at the sale of Professor Graham's Herbarium, his set of my plants from that Province, which, although an early one, I find to be deficient in nearly one hundred species of *Compositæ* alone.

Hab. Chapada de Mangabeira, Province of Goyaz, October, 1839.

Herba 1-1½-pedalis. Folia 2-3 poll. longa, pollicem lata, coriacea, supra adpresse piloso-villosa, subtus villoso-lanata. Corolla glabra, violacea. Pappus albus, involucrum multo superans.

Allied to V. *simplex*, Less. from which it is distinguished by its stouter habit, larger and coriaceous leaves, rusty golden colour, larger heads, acute not acuminated involucral scales, and pure white pappus.

4177. V. *pungens*; caule basi suffruticoso erecto paniculato-ramoso tereti striato adpresse cinereo-pubescente, foliis sessilibus linearibus acutis apiculatis margine integris valde revolutis supra adpresse pubescentibus subtus sericeo-tomentosis, capitulis ad apices ramorum longe pedicellatis 4-5-floris, involucri squamis glabris lineari-lanceolatis acuminatis multiserialibus, receptaculo nudo, achænio dense sericeo-villoso, pappi serie externa angusta paleacea acuta.

Hab. Dry upland Campos near the Villa de Arrayas, Province of Goyaz. April 1840.

Suffrutex bipedalis. Folia 2 poll. longa, 1½ lin. lata. Corolla violacea, glabra. Pappus rufescens.

This will range along with V. *laxa*, Gardn., from which it differs in its much longer, narrower leaves, laxer habit, and more numerous florets. They both belong to the 6th division of the section *Lepidaploa*.

3794. V. *monocephala*; caule herbaceo erecto simplici tereti dense lanuginoso-tomentoso usque ad apicem folioso, foliis sessilibus late ovato-suborbiculatis utrinque obtusis subcrenatis membranaceis supra scabriusculis sparse pilosis subtus villoso-tomentosis, capitulis magnis multifloris ad apicem caulis solitariis aphyllis, involucri campanulati squamis imbricatis ovato-oblongis obtusis extus villosis margine dense ciliatis, cor. lobis apice pilosis, achænio striato seriebus 10 pilosis notato, pappi serie externa paleacea acuta achænio duplo breviore.

Hab. Dry upland campos near Arrayas, Province of Goyaz. April, 1840.

Herba 1½-2-pedalis. Folia 3-3½ poll. longa, 2-2½ poll. lata, pennivenia, venis subtus prominulis. Capitula pollicem lata. Corolla violacea. Achænium sesquilineare. Pappus sordidus.

This as a species will range along with V. *grandiflora*, Less.

3794 (bis). V. *squamosa;* caule suffruticoso erecto tereti striato cinereo-lanuginoso apice parce ramoso, foliis sessilibus longe lanceolatis coriaceis utrinque attenuatis apice acutis integris supra scabris subtus flavicantibus tomentosis penniveniis, ramis subscorpioideis, capitulis globosis 55-60-floris sessilibus axillaribus vel extra-axillaribus folio florali brevioribus, involucri squamis multiserialibus laxe imbricatis concavis ovato-ellipticis obtusissimis glabriusculis ciliatis, cor. lobis puberulis, achænio 10-striato villoso, pappi serie interna ad apicem subclavata, externa paleacea acuta achænio duplo breviore.

Hab. Dry upland Campos, near Villa de Arrayas, Province of Goyaz. March, 1840.

Suffrutex bipedalis. Folia 4-6 poll. longa, 10½ lin. lata. Corolla purpurea. Pappus sordidus.

Near V. *clavata*, Gardn., and perhaps V. *obscura*, Less.

4179. V. *resinosa;* caule suffruticoso tereti striato minute adpresse tomentoso apice paniculato-ramoso, foliis breve petiolatis lanceolatis basi apiceque acutis integris utrinque puberulis et creberrime minute resinoso-punctatis, cymis terminalibus tripartitis, ramis brevibus, capitulis secus ramos ad axillas sessilibus solitariis unilateralibus 10-floris folio florali brevioribus, involucri cylindracei squamis pubescentibus extus ad apicem resinoso-punctatis, intimis lineari-oblongis acutis 3-nervibus, cor. lobis extus pilosis, achænio sericeo-villoso, pappi serie externa paleacea brevi.

Hab. Dry sandy Campos between Arrayas and San Domingos, Province of Goyaz. May, 1840.

Suffrutex 3-4-pedalis. Folia 2-3-poll. longa, 5-9 lin. lata, pennivenia, venis subtus prominulis, supra viridia, subtus pallida. Corolla violacea. Pappus albescens.

This species will range along with V. *eremophylla*, Mart., and its allies. The leaves on both sides are covered with a dense mass of small resinous glands.

3791. V. *ehretiæfolia ;* caule suffruticoso sulcato ad apicem ramoso, ramis elongatis subflexuosis angulato-striatis subpiloso-puberulis foliosis, foliis subsessilibus basi obtusis apice acutis mucronulatis subcrenato-denticulatis membranaceis supra glabriusculis scabris subtus pubescentibus pallidis grosse reticulatis, capitulis ad axillas foliorum secus ramos subdistantibus sessilibus 1-4 folio florali multo brevioribus ovatis 20-floris, involucri squamis exterioribus ovato-lanceolatis acutis ad apicem longe ciliatis, interioribus lanceolato-linearibus acuminatis obtusis 3-nervibus, achænio glaberrimo 10-striato, pappi serie externa brevissima paleacea apice erosa.

Hab. Woods near Villa de Arrayas, Province of Goyaz. April, 1840.

Suffrutex 3-4-pedalis. Folia 2-4-poll. longa, 1-2-poll. lata, supra nitida. Corolla violacea, glabra. Pappus sordidus.

Near my V. *Ararana* (n. 4781), both of which will range along with V. *varroniæfolia*, DC., in his 5th division of the sect. *Lepidaploa*.

3258 et 3789. V. *oligocephala ;* suffruticosa, tota cinereo-tomentosa, apice ramosa, ramis teretibus striatis, foliis breve petiolatis oblongis utrinque obtusis vel ovatis basi subcordatis apiculatis integerrimis utrinque villoso-tomentosis et resinoso-punctatis, capitulis axillaribus sessilibus solitariis 40-floris, involucri hemisphærici squamis imbricatis patulis acuminatissimis dorso villosis, achænio sericeo-villoso, pappi serie externa paleacea brevi.

Hab. Dry Campos near Villa de Natividade (3258), and Villa de Arrayas (3789), Province of Goyaz. January and April, 1840.

Suffrutex bipedalis. Folia 2-2½ poll. longa, 9-12-lin. lata. Corolla violacea, glabra. Pappus albidus.

Near V. *arenaria*, Mart. from which it differs in being less branched, more tomentose, with fewer and larger capitula, more acuminated involucral scales, and whiter pappus. Under n. 3789, I have two specimens one of which perfectly agrees with n. 3258, while the other has more sessile leaves, which are besides broader and somewhat cordate at the base, but in other respects is quite the same as the specimen with which it is associated.

3799. V *graminifolia;* suffruticosa, caule erecto apice parce ramoso glabriusculo tereti valde striato, foliis longe linearibus apiculatis margine integerrimis valde revolutis glabris supra grosse reticulato-venosis, venis prominulis, subtus impresso-punctatis, ramis floriferis paucis subscorpioideis, capitulis extra-axillaribus solitariis sessilibus 40-floris, involucri campanulati squamis dorso puberulis ciliatis, externis oblongo-lanceolatis acutis, intimis linearibus obtusis apice coloratis, achænio striato piloso, pappi serie externa subpaleacea acuta brevi.

Hab. Dry grassy Campos near Villa de Arrayas, Province of Goyaz. April, 1840.

Suffrutex bipedalis. Folia 4-10 poll. longa, sesquilineam lata. Corolla violacea, glabra. Pappus sordidus.

Near V. *rubricaulis*, H. et Bonpl., and V. *chromolepis*, Gardn., but very distinct from both.

3796. V. *elegans;* suffruticosa, erecta, ramosa, ramis teretibus striatis parce araneoso-tomentosis, foliis subsessilibus lineari-lanceolatis utrinque acutis margine revolutis integerrimis supra glabriusculis nitidis subtus cinereo-tomentosis grosse reticulato-venosis, venis glabriusculis, ramis floridis gracilibus subscorpioideis, capitulis ad axillas foliorum sessilibus solitariis folio multo brevioribus 12-floris, involucri ovati squamis dorso puberulis, externis ovato-ellipticis mucro-

natis ciliatis coloratis, intimis linearibus obtusis, achænio sericeo-villoso, pappi serie externa subpaleacea lineari acuta achænio longiore.

HAB. Dry upland Campos near Villa de Arrayas, Province of Goyaz. April, 1840.

Suffrutex 2-2½-pedalis. Folia 2½-3½ poll. longa, 4-6-lin. lata, supra viridia. Corolla violacea, glabra. Pappus sordidus. Allied to the preceding species, from which it is distinguished by its more branched habit, shorter, broader leaves, and fewer flowered capitula.

4182. V. *Missionis;* fruticulosa, erecta, ramosa, cinereo-tomentosa, ramis teretibus valde striatis, foliis sessilibus oblongis obtusis calloso-apiculatis basi cuneatis margine calloso-dentatis utrinque villoso-lanatis supra demum glabratis scabris penniveniis, venis utrinque prominulis, ramis floridis vix scorpioideis, capitulis axillaribus sessilibus solitariis vel geminis folio longioribus vel eum subæquantibus 12-floris, involucri ovati squamis dorso villoso-tomentosis resinoso-glanduloso-punctatis subpungentibus, externis lanceolatis ciliatis, intimis lineari-lanceolatis, corollæ extus glanduloso-punctatæ lobis ad apicem pilosis, achænio creberrime rubro-resinoso-glanduloso, pappi serie externa anguste paleacea brevi.

HAB. Grassy Campos near the Mission of Duro, Province of Goyaz. October, 1839

Suffrutex bipedalis. Folia 1½ poll. longa, 6-7 lin. lata. Corolla violacea. Pappus albidus.

Apparently allied to V. *senecionea*, Mart.

3795. V. *davalliæfolia;* suffruticosa, ramis teretibus striatis sublanuginoso-tomentosis, foliis sessilibus oblongis vel ovato-oblongis obtusis basi subcordatis vix crenato-subdenticulatis membranaceis supra glabris subtus villoso-subtomentosis penniveniis reticulatis, venis utrinque prominulis, ramis floridis subscorpioideis, capitulis sessilibus solitariis extra-axillaribus folio florali brevioribus 40-floris, involucri campanulati squamis dorso puberulis, externis ovatis acutis, intimis linearibus acuminatis obtusis, corolla glabra, achænio 10-costato basi pilosiusculo cæteris sparse resinoso-punctatis, pappi serie externa paleacea acuta achænio breviore.

Hab. Upland Campos near Villa de Arrayas, Province of Goyaz. April, 1340.

Suffrutex subbipedalis. Folia 2½-3½ poll. longa, 12-15 lin. lata. Corolla purpurea. Pappus sordidus.

Apparently near V. *Zuccariniana*, Mart.

3792. V. *hoveæfolia;* glaberrima, caule suffruticoso erecto ramoso tereti, ramulis subangulatis, foliis breve petiolatis late linearibus utrinque obtusis vel acutis apice breviter apiculatis vel submuticis integris coriaceis penniveniis utrinque eleganter reticulatis, ramis subscorpioideis, capitulis ad axillas foliorum secus ramos sessilibus solitariis vel gemminis folio florali brevioribus 10-12-floris, involucri ovati squamis squarrosis glaberrimis ciliatis, externis ovato-lanceolatis acuminatis, intimis lanceolato-linearibus longe acuminatis, corolla glabra, achænio 10-striato sericeo-villoso, pappi serie externa paleacea acuminata achænio breviore.

Hab. Dry upland Campos near Villa de Arrayas, Province of Goyaz. April, 1840.

Suffrutex 3-4-pedalis. Folia 2½-3 poll. longa, 4-7-lin. lata, subtus impresso-punctata. Corolla purpurea. Pappus stamineus.

Allied to V. *lævigata*, Mart., from which it differs in its petiolate, not sessile leaves, which are besides shorter and broader, and its squarrose, not adpressed, involucral scales. It is a very variable plant, particularly in the length of the floriferous branches, and the shape of the leaves.

Stilpnopappus, *Mart.*

4189. S. *glomeratus;* suffruticosus, erectus, versus apicem dichotomo-ramosus, ramis teretibus striatis araneoso-tomentosis, foliis sessilibus lineari-lanceolatis acutis basi obtusis margine subrevolutis integris supra glabris nitidis subtus dense cinereo-tomentosis, capitulis 1-3 axillaribus vel ad apices ramulorum sessilibus 10-floris, involucri floribus brevioris squamis 3-seriatis, externis ovato-oblongis subfoliaceis obtusis utrinque tomentosis, intimis lineari-oblongis acutis 3-nervibus glabris.

HAB. Upland Campos near Nossa Senhora d'Abadia. Province of Goyaz. May, 1840.

Suffrutex bipedalis. Folia 3-3½ poll. longa, 6-9 lin. lata. Corolla glabra, violacea. Achænium turbinatum, 10-costatum, sulcis dense sericeo-pilosis. Pappus duplex, persistens, lucens, albidus, paleis externis 20 circiter linearibus acuminatis serrulatis, intimis duplo longioribus complanatis acuminatis serrulatis. Receptaculum fimbrilliferum.

3259. S. *emarginatus;* fruticosus, ramosus, ramulis angulatis cinereo-velutino-tomentosis foliosis floriferis, foliis petiolatis coriaceis obovato-ellipticis vel oblongis apice profunde emarginatis basi obtusis vel acutis integerrimis junioribus utrinque ferrugineo-velutinis demum glaberrimis et creberrime minute resinoso-punctatis penniveniis, capitulis secus ramos extra-axillaribus solitariis sessilibus 13-floris, involucri floribus brevioris squamis 3-seriatis, externis ovatis obtusis, intimis late linearibus obtusis 3-nervibus, utrinque ad apicem extus resinoso-subtomentosis, cæteris glabris.

HAB. Dry hills near Villa de Natividade, Province of Goyaz. January, 1840.

Frutex magnus, valde ramosus. Folia 2-3-poll. longa, 1-2-poll. lata, utrinque pulchre reticulata. Corolla glabra, violacea. Achænium turbinatum, 10 costatum sulcis dense sericeo-villosis. Pappus duplex, persistens, lucens, paleis lineari-complanatis, externis obtusis enerviis ad apicem laceratis, intimis triplo longioribus uninerviis margine serrulatis. Receptaculum fimbrilliferum.

2894. S. *Riedelianus*, Gardn.—Vernonia Riedeliana, *Gardn. in Hook. Lond. Journ. of Bot.* 5, *p.* 213.

When this species was originally published, I remarked that I had doubts as to whether it should not be referred to *Stilpnopappus* rather than to *Vernonia*, from the decided paleaceous nature of both series of the pappus. A more

attentive consideration of the subject, and a comparison of it with the two new species above described, has convinced me that, however different in habit from the herbaceous *Stilpnopappi*, their characters otherwise are not different. Mr. Bentham has suggested (Hook. Journ. 5, p. 214) that the genus *Strophopappus* of De Candolle, which, according to Martius, was founded on the same plant as Lessing's *Vernonia speciosa*, now *Stilpnopappus patulus* of Martius, should be restored for that species and my present ones, but I have looked in vain for characters on which to re-establish that genus.

ALBERTINIA, *Spreng.*

3804. A. (Anisotrichia) *Goyazensis ;* fruticosa, ramosa, ramis teretibus striatis cinereo-velutinis, foliis breve petiolatis late ovato-ellipticis obtusis basi acutiusculis integerrimis supra glabris subtus adpresse cinereo-velutinis, summis oblongis, capitulis 1-floris dense in glomerulum confertis, involucri squamis liberis linearibus 1-nerviis, externis obtusis extus densissime lanuginosis, intimis duplo fere longioribus acutis extus ad apicem resinoso-glanduloso-punctatis, achænio pilosiusculo.

HAB. Dry upland Campos near Villa de Arrayas, Province of Goyaz. April, 1840.

Frutex 6-pedalis. Folia 3-3½-poll. longa, 2½-3-poll. lata, coriacea, pennivenia, venis subtus prominulis. Corolla glabra, violacea. Achænium turbinatum, obtuse 10-costatum. Pappus 3-serialis, stramineus, setis omnibus angustis acuminatis scabridis, serie exteriore triplo fere breviore.

Near A. *pallidiseta*, DC., from which it is principally distinguished by the nature of the involucral scales.

ELEPHANTOPUS, *Cass.*

3806. E. *riparius ;* caule erecto ramoso strigoso-villoso, foliis lineari-lanceolatis acutis basi longe attenuatis margine

revolutis obscure crenato-dentatis utrinque adpresse pilosis, radicalibus basi dilatatis amplexicaulibus, floralibus parvis ovatis obtusis reticulatis pilosis minute pellucido-punctatis.

HAB. Shady banks of streams near Villa de Arrayas, Province of Goyaz. April, 1840.

Herba 1½ pedalis. Folia præsertim radicalia membranacea, pennivenia, 3-4-poll. longa, 4½-7½ lin. lata, floralia 1½ lin. longa. Capitula 4-flora, in glomerulum foliolis cinctum dense aggregata. Involucrum compressum, biseriale, squamis lineari-lanceolatis acuminatis apice pungentibus 3-nerviis glabris. Corolla glabra, violacea. Achænium oblongum, compressum, pilosum. Pappus 1-serialis, paleis 5 setaceis elongatis basi dilatatis serrulatis.

Allied to E. *Carolineanus*, Willd., from which, and its allies, it is distinguished at first sight by its small floral leaves.

4200 E. *vaginatus*; caule erecto ramoso angulato glabro, foliis caulinis longe lanceolato-linearibus acuminatis basi dilatatis vaginatis obscure crenato-dentatis glaberrimis utrinque impresso-punctatis, floralibus late ovatis acuminatis glabris pellucido-punctatis reticulatis 3-nerviis, nervis basi valde dilatatis in unicum latum membranaceum concretis.

HAB. Near San Domingos, Province of Goyaz. May, 1840.

Herba 1½-2-pedalis. Folia radicalia ignota, caulinia 5-6-poll. longa, 8-lin. lata. Capitula 4-flora, in glomerulum foliis cinctum dense aggregata. Involucrum compressum, biseriale, squamis lineari-lanceolatis acuminatis multinerviis glabris. Corollæ violaceæ, lobis extus resinoso-glanduloso-punctatis. Achænium oblongum, compressum, inæqualiter 10-costatum, inter costas resinoso-glanduloso-punctatum, cæterum glabrum. Pappus 1-serialis, coroniformis, 5-dentatus, dentibus parvis ovatis breviter aristatis.

The sheathing leaves, and the remarkable nature of the pappus, at once distinguish this plant from all the others of the genus. In habit it agrees with my E. *palustris*.

3807. E. *elongatus*! caule erecto simplici tereti striato folioso, foliis longe lineari-oblongis obtusis acutisque basi longe attenuatis serrato-dentatis supra scabridis demum glabratis, floralibus ovatis acutis serrato-dentatis 3-nerviis reticulatis intus minute impresso-punctatis.

HAB. Dry upland Campos, near Villa de Arrayas, Province of Goyaz. April, 1840.

Herba 2-3-pedalis. Folia 6-8-poll. longa, 12-15-lin. lata, floralia 4½ lin. longa, 3-lin. lata. Capitula 4-flora, in glomerulum foliolis cinctum dense aggregata. Glomeruli in spicam densam dispositi. Involucrum compressum, biseriale, squamis lineari-lanceolatis acutis pungentibus 3-nerviis, extus ad apicem pilosiusculis. Corolla glabra, violacea. Achænium oblongum, compressum, pilosum. Pappus 1-serialis, paleis 10 circiter setaceis basi dilatatis serrulatis achænio brevioribus.

This and the following species are distinguished from all the others of the genus by their simple stems, and the racemoso-spicate arrangement of the glomeruli. From each other, they are distinguished by the cauline leaves of the present species being much attenuated at the base, not obtuse and amplexicaul, and the pappus consisting of 5, not 10, setæ.

4199. E. *racemosus*; caule erecto simplici tereti striato villoso folioso, foliis oblongis vel obovato-oblongis obtusis, radicalibus basi attenuatis, caulinis amplexicaulibus crenato-serratis supra scabridis villosis demum glabratis subtus villoso-tomentosis, floralibus ovatis obtusis 3-nerviis reticulatis villosis dense ciliatis.

HAB. Dry sandy Campos near Capella da Posse, Province of Goyaz. May, 1840.

Herba 2-2½-pedalis. Folia 6-8-poll. longa, 18-24-lin lata, floralia 4 lin. longa, 2½ lin. lata. Capitula 4-flora, in glomerulum foliolis cinctum dense aggregata. Glomeruli in racemum strictum elongatum dispositi. Involucrum compressum, biseriale, squamis lineari-lanceolatis acutis pungentibus 3-5 nerviis extus ad apicem pilosis. Corolla glabra, violacea. Achænium oblongum, compressum, pilo-

sum. Pappus 1-serialis, paleis 5 setaceis basi dilatatis serrulatis achænio brevioribus.

Lorentea, *Less.*

3264. Lorentea (Cryptopetalum) *brevipedunculata;* caulibus plurimis decumbentibus ramosissimis piloso-pubescentibus, foliis sessilibus linearibus apice piliferis margine revolutis infra medium longe ciliatis glabris subtus nigro-glanduloso-punctatis, pedunculis brevissimis terminalibus 1-bracteatis 1-cephalis, capitulis 20-floris, involucri squamis obovato-oblongis obtusis mucronatis glabris ciliatis, achæniis pilosiusculis, pappo disci biseriali aristato serrato inæquali, radii 1-seriali setis 3 elongatis cæteris paulo brevioribus.

Hab. Dry gravelly places near the Arrial de Chapada, Province of Goyaz. December, 1839.

Herba vix pedalis, basi suffruticulosa. Folia 6-8-lin. longa, 1-1½ lin. lata. Pedunculi 2-3-lin. longi. Involucrum vix 3 lin. longum.

This species will range along with my L. *congesta,* from which it is distinguished by its much larger size, laxer habit, more numerous florets, and the nature of the pappus.

The following is a list of the names of those species belonging to the *Vernoniaceæ,* in my Goyaz collections, which I have ascertained were previously described.

3786 et 3787.	Vernonia	*tricholepis,* DC.
4176.	,,	*apiculata,* Mart.
4184.	,,	*rotundifolia,* Less.
4180.	,,	*stricta,* Gardn.
4191.	,,	*firmula,* Mart.
4186.	,,	*nitens,* Gardn.
4190.	,,	*argyrophylla,* Less.
3251.	,,	*simplex,* Less.
4192.	,,	*Radula,* Mart.
3248 et 3250	,,	*desertorum,* Mart.
4187.	,,	*eriolepis,* Gardn.
3254.	,,	*dense-villosa,* Mart.
3794.	,,	*lævigata,* Mart.

3805. Elephantopus *Martii*, Graham.
3263. Trichospira *biaristata*, Less.

EUPATORIACEÆ, *Less.*

If the characters of the genera which constitute the division *Alomieæ* of the subtribe *Eupatorieæ* of De Candolle be compared with each other, they will be found, with the single exception of *Isocarpha*, which is a good genus, to differ in no essential respect. Such differences as a single or double row of involucral scales, few or many florets in the capitula, and pilose or glabrous corollæ, surely cannot be considered as sufficient generic distinctions. Were such principles to be acted on throughout the order, we should find that *Eupatorium* alone would resolve itself into at least half a dozen genera. I therefore propose that the genera alluded to should all be thrown into a single one under the original name of *Piqueria*, the naked receptacle and the absence of pappus constituting its essential character. It may be divided into two sections, the first, *Eupiqueria*, containing the few flowered, and the second, *Alomia*, the many flowered species.

It must have occurred to all those who have made the *Compositæ* their study, that this is not the only instance in which De Candolle has multiplied genera to a most unwarrantable extent. Though very much is due to the learned Genevese Botanist for his great labours on the order, more especially in bringing together the great mass of species, which previous to his investigation of them were scattered in an undigested form through many works, yet the laxity of his views with regard to genera, the want of a better principle than that of the nature of the style on which to found the great divisions, and the vast additions which have been made to it during the last ten years from all parts of the world, render a revision of the whole tribe much called for by some one who has the time, the talents and the materials for such a task.

Piqueria, *Cav.*

Alomia, *H. B. et K.*—Orsinia, *Bert. et. DC.*—Phalacræa, *DC.*—Gymnocoronis, *DC.*

Char. Gen. — *Capitulum* 3- multi-florum, homogamum. Involucrum nudum. *Corolla* tubulosa, faux præsertim dilatata, hirsuta vel glabra. *Antheræ* appendicibus sæpe terminatæ. Styli rami longe exserti, apice obtusi vel clavati. Achænium 5-angulatum, calvum —. Herbæ *aut suffrutices Americanæ, erectæ, ramosæ, glabræ vel pubescentes, interdum glanduloso-viscosæ.* Folia *opposita aut alterna, petiolata, varia, sæpius 2-nervia.* Capitula *corymbosa aut paniculata, parva.* Flores *sæpissime albi.*

Sect. I. Eupiqueria, *DC.*

Capitulum 3-7-*florum. Involucrum oblongum.*

All the seven species described by De Candolle under *Piqueria* belong to this section, together with the two following:

P. *densiflora,* Benth. Bot. Beech. Voy. p. 110.

P. *Eupatorium.*—Orsinia Eupatoria, *DC. Prod.* 5. *p.* 104.

Sect. II. Alomia.—Alomia, *H. B. et K.*

Capitulum multiflorum. Involucrum campanulatum.

P. *ageratoides.*—Alomia ageratoides, *H. B. et K.*—*DC Prodr.*

P. *attenuat.*—Gymnocoronis attenuata, *DC. Prodr.*

P. *subcordata,.*—Gymnocoronis subcordata, *DC. Prodr.*

P. *latifolia.*—Phalacræa latifolia, *DC. Prodr.*

To these I add the three species of *Isocarpha,* which I formerly described in the 5th vol. of "Hooker's London Journal of Botany," a re-examination of them having convinced me that they were very erroneously placed in that genus, their receptacles being naked, not chaffy. The scales which formerly deceived me are the narrow inner ones of the involucrum. I will here give amended characters of them, together with those of two new ones from the Province of Goyaz.

4837. P. *fastigiata;* caule herbaceo erecto ramoso, ramis teretibus striatis pubescenti-tomentosis, foliis oppositis in petiolum basi longe attenuatis superne oblongis obtusis pauce dentatis vel subintegris triplinerviis membranaceis glabris pellucido-punctatis, capitulis paucis ad apices ramulorum corymbosis breviter pedicellatis 20-26-floris.

Isocarpha fastigiata, *Gardn. in Hook. Lond. Journ. 5. p.* 455.

HAB. In moist open places in the Diamond District, Brazil. July, 1840.

Herba bipedalis. Folia 2-2½ poll. longa, 3-4-lin. lata. Involucrum campanulatum, squamis biseriatis, oblongo-lanceolatis, acutis, 3-nerviis, 1½ lin. longis. Receptaculum conicum, nudum. Corollæ tubulosæ, ad faucem ampliatæ, extus glanduloso-puberulæ, lineam circiter longæ, albæ. Styli rami longe exserti, cylindrici, obtusi. Achænium oblongum, nigrum, acute pentagonum, glabrum, epapposum.

4839. P. *eupatorioides*; caule herbaceo erecto ramoso, ramis teretibus pubescentibus, foliis petiolatis ovato-oblongis vel oblongo-lanceolatis utrinque acutis vel rariter obtusiusculis supra glabriusculis subtus pubescentibus grosse serrato-dentatis, capitulis conferto-corymbosis circiter 40-floris.

Isocarpha eupatorioides, *Gardn. in Hook. Lond. Journ. Bot. l. c.*

HAB. In moist open places, near San Romao, Province of Minas Geraes, Brazil. July, 1840.

Herba 1-2 pedalis. Folia 10-18 lin. longa, 4-5 lata, supra viridia, subtus pallida. Petioli 2 lin. circiter longi. Involucrum campanulatum, squamis biseriatis, lineari-oblongis, obtusis, 3-nerviis, extus villosis, apice barbatis, 1½ lin. longis. Receptaculum conicum, nudum. Achænium oblongum, 5-angulatum, nigrum, epapposum.

4838. P. *foliosa*; tota villoso-subtomentosa, caule herbaceo suberecto ramoso, ramis teretibus striatis foliosis, foliis sessilibus oblongo-lanceolatis utrinque obtusis supra medium serrato-dentatis triplinerviis, capitulis paucis ad apicem ramulorum corymbosis circiter 30-floris.

Isocarpha foliosa, *Gardn. in Hook. Lond. Journ. Bot. l. c.*

Hab. In inundated places on the banks of the Urucuya, near San Romao, Province of Minas Geraes. June, 1840.

Herba 1-1½ pedalis. Folia 10 lin. longa, 3 lin. lata. Involucrum campanulatum, squamis biseriatis, oblongis obtusis, 3-nerviis, extus dense villosis, 1½ lin. longis. Receptaculum conicum, nudum. Corollæ tubulosæ, ad faucem dilatatæ, glabræ, 1½ lin. longæ. Styli rami exserti, clavati. Achænium oblongum, 5-angulatum, glabrum, nigrum, eleganter reticulatum, epapposum.

3810. P. *cinerea*; caule basi suffruticoso erecto tereti striato glanduloso-piloso velutino apice corymboso ramoso, foliis alternis late linearibus elongatis obtusis basi attenuatis crenulato-serratis utrinque cinereo-velutinis penniveniis, pedunculis corymbosis glanduloso-pubescentibus, capitulis breviter pedicellatis 35-floris.

Hab. Dry upland campos, near Villa de Arrayas, Province of Goyaz. April, 1840.

Caules plures ex eadem radice, 2-2½ pedales. Folia sessilia, 2½-3-poll. longa, 2-3-lin. lata. Involucrum campanulatum, squamis biseriatis, æqualibus, lanceolato-linearibus, obtusis, extus resinoso-glandulosis et versus apicem dense pilosis, 3-nerviis, 2-lin. longis. Receptaculum planum, nudum. Corollæ ad faucem ampliatæ, extus hirsutæ, obtuse 5-dentatæ. Antheræ apice breviter appendiculatæ. Styli rami elongati, apice clavati. Achænium oblongum, basi attenuatum, 5-angulatum, glabrum, nigrum, calvum.

3809. P. *angustata*; annua, caule erecto tereti striato ramoso viscoso-villoso, foliis oppositis alternisque longe petiolatis ovatis alatis basi truncatis 3-nerviis plus minus angulato-lobatis, lobis grosse dentatis, dentibus obtusis minute celluloso-mucronatis utrinque pilosiusculis viscosis, pedunculis petiolisque villosis dichotomo-corymbosis, capitulis paucis pedicellatis 12-floris.

HAB. On limestone rocks in shady woods, near the Villa de Arrayas, Province of Goyaz. March, 1840.

Herba annua, 1½-pedalis. Folia 3-3½ poll. longa, 2½-3 poll. lata: petioli 2½-3-poll. longi. Involucrum campanulatum, glanduloso-pilosum, squamis subseriatis, æqualibus, lanceolatis, acuminatis, glanduloso-ciliatis, 3-nerviis, 2½ lin. longis. Receptaculum conicum, nudum. Corollæ tubus basi glanduloso-pilosus; faux ampliata; limbus 5-fidus. Antheræ apice breviter appendiculatæ. Styli rami exserti, apice clavati. Achænium oblongum, basi attenuatum, vix angustatum, glabrum, nigrum, calvum.

This species will range along with P. *latifolia*, (*Phalacræa latifolia*, DC.), from which it is well distinguished by its larger lobed leaves, and very long petioles.

ADENOSTEMMA, *Forst.*

4204. A. *suffruticosa;* caule basi suffruticoso subangulato simplici apice præsertim glanduloso-puberulo seu scabrido, foliis petiolatis oblongo-ellipticis basi longe cuneato-attenuatis infra medium triplinerviis versus apicem vix crenatis glaberrimis, panicula dichotomo-corymbosa laxa ramis glanduloso-pubescentibus, involucri squamis oblongis obtusis dorso puberulis glanduloso-ciliatis, achæniis glanduloso-muricatis.

HAB. Moist bushy places, near Nossa Senhora d'Abadia, Province of Goyaz. May, 1840.

Suffrutex 3-6-pedalis. Folia opposita, 4-8-poll. longa, 1½-2½ poll. lata, subcarnosa. Capitulum multiflorum. Receptaculum planum, nudum, foveolatum. Involucrum campanulatum, squamis 2½ lin. longis. Corolla tubulosa, 5-dentata, lobis extus glanduloso-tomentosis; faux subampliata. Styli rami longi exserti, clavati. Achænium oblongum, basi attenuatum, subtriangulatum. Pappus aristis 3 patentibus obtusis.

STEVIA, *Cavan.*

4203. S. (§ multiaristatæ) *hyptifolia ;* caule basi suffruticoso erecto apice corymboso-ramoso tereti striato rufo-villoso-tomentoso, foliis oppositis sessilibus cuneato-oblongis obtusis basi longe attenuatis crenato-dentatis triplinerviis utrinque tomentosis, corymbo fastigiato villoso, capitulis pedicellatis, involucri squamis lineari-lanceolatis acuminatis piloso-pubescentibus ciliatis 3-nerviis, achænio lineari-oblongo 5-angulato pilosiusculo, pappi aristis 15 æqualibus scaberrimis achænio longioribus.

HAB. Upland campos, near Nossa Senhora d'Abadia, Province of Goyaz. May, 1840.

Suffrutex 2-2½-pedalis. Folia 12-18-lin. longa, 2½-4 lin. lata. Involucrum oblongum, 4-lin. longum. Corollæ roseæ, cylindraceæ, basi constrictæ, pilosæ. Styli rami longe exserti.

Near S. *Veronicæ*, DC.

TRICHOGONIA, *Gardn.*

4226. TR. *menthæfolia* ; herbacea, caule erecto tereti striato ramoso dense glanduloso-pubescente, foliis petiolatis alternis oblongo-lanceolatis acutis basi cuneatis triplinerviis serrato-dentatis utrinque puberulis supra demum glabratis, capitulis pedicellatis corymbosis 50-circiter-floris, involucri squamis biserialibus æqualibus obovato-oblongis obtusis dense piloso-tomentosis 3-nerviis.

HAB. Campos near Capella da Passe, Province of Goyaz. May, 1840.

Herba perennis, 1½-2-pedalis. Folia 2½-3 poll. longa, 8-11 lata: petioli 8 lin. longi. Involucrum campanulatum, squamis vix 2-lin. longis. Receptaculum planum, nudum, glabrum. Corollæ ad faucem dilatatæ, extus hirsutæ, 1½-lin. longæ, pallide purpureæ. Styli rami elongati, semiteretes, obtusi. Achænium oblongum, basi attenuatum, acute 5-angulatum, ad angulos præcipue piloso-scabrum, demum glabratum. Pappus corolla brevior, æqualis, uniserialis; paleis setosis, plumosis, sordidis.

4225. Tr. *laxa;* suffruticosa glanduloso-piloso-pubescens, caule erecto ramoso tereti striato, foliis alternis petiolatis oblongis obtusis basi attenuatis triplinerviis margine revolutis crenatis supra pilosis subtus piloso-tomentosis, capitulis longe pedicellatis paniculato-corymbosis circiter 30-floris, involucri squamis 2-serialibus æqualibus spathulato-oblongis obtuse dense piloso-tomentosis 3-5-nerviis.

HAB. Dry arid sandy campos, near Capella da Passe, Province of Goyaz. May, 1840.

Suffrutex, bipedalis. Folia 12-15 lin. longa, 4-6 lin. lata. Involucrum campanulatum, squamis 3-lin. longis, interioribus angustioribus. Receptaculum planum, nudum. Corollæ ad faucem ampliatæ, extus hirsutæ, circiter 2-lin. longæ, pallide purpureæ. Styli rami elongati, compressi, apice subclavati. Achænium oblongum, basi attenuatum, acute 5-angulatum, ad angulos præcipue piloso-scabrum. Pappus corolla vix brevior, æqualis, uniserialis, paleis setosis, plumosis, stramineis.

LIATRIS, *Schreb.*

3831. L. (Leptoclinium) *trichotoma;* fruticosa trichotomo-ramosa, ramis teretibus striatis piloso-pubescentibus dense foliosis, foliis alternis sessilibus oblongo-lanceolatis utrinque obtusis triplinerviis integerrimis pilosiusculis supra demum glabratis, corymbo ad apices ramulorum subsessili terminali polycephalo, capitulis confertis breviter pedicellatis 5-floris, involucri oblongi squamis 3-seriatis ovato-oblongis acutis glabris ciliatis striatis, exterioribus, brevioribus, achænio 5-angulato glaberrimo.

HAB. Dry grassy hills, near Villa de Arrayas, Province of Goyaz. April, 1840.

Frutex 3-4-pedalis. Folia 8-12 lin. longa, 3-4 lin. lata, supra viridia, subtus pallida. Involucrum 4 lin. longum, subrubicundum. Receptaculum obtuse conicum, punctatum, nudum. Corollæ tubulosæ, glabræ, pallide luteæ, 5-dentatæ, dentibus oblongis, obtusis. Antheræ inclusæ, apice breviter et obtuse appendiculatæ. Styli basi bulbosi, rami compresso-clavati, longe exserti. Pappus 2-serialis, setis barbellatis stramineis, interioribus corollam subæquantibus, exterioribus paulo brevioribus.

This is a true congener of my *Liatris Braziliensis* (n. 4864), agreeing with it in habit, but distinguished by its membranous, triplinerved, entire, pilose leaves, and glabrous achænia.

CHROMOLÆNA, *DC.*

3828. C. *epaleacea*; caule herbaceo erecto tereti striato hispido apice ramoso, foliis oppositis sessilibus late ovatis obtusis basi cordatis 5-nerviis crenatis supra scabridis subtus 5-nerviis valde reticulatis minute resinoso-punctatis, capitulis ad apices ramulorum paucis subcorymbosis 60-floris, involucri campanulati squamis multiserialibus laxe imbricatis oblongis obtusis concavis glabris striatis, achænio ad angulos scabriusculo.

HAB. Upland campos, near Villa de Arrayas, Province of Goyaz. March, 1840.

Herba perennis, 2-3-pedalis, basi lignosa. Folia 3½-4 poll. longa, 2-2½ poll. lata. Capitula 6 lin. longa, 4½ lin. lata, albida. Receptaculum conicum, nudum. Corollæ violaceæ, involucro breviores. Achænia acute 5-angulata. Pappus uniserialis, setosus, setis scabridis, stramineis, corollam subæquantibus.

I have been much puzzled where to refer this plant, which in every thing but the naked receptacle, is a *Chromolæna*. With *Campuloclinium* it agrees in its conical receptacle, but its many ranked involucrum prevents its being put into that genus; and although there are some true species of *Eupatorium* which have convex receptacles, yet I can find no described species of that genus with which the present plant will associate. Guided by its natural affinities, I shall consider it, for the present, as a *Chromolæna*.

OOCLINIUM, *DC.*

3814. O. *depressum;* herbaceum, caule erecto tereti striato ramoso pilis longis articulatis villoso, foliis oppositis petiolatis ovato-oblongis utrinque acutis apice mucronulatis 3-nerviis serrato-dentatis utrinque petioloque villosis, pedunculis brevibus 1-cephalis, capitulis 35-40 floris, involucri squamis 2-seriatis striatis glabris adpressis, exterioribus ovato-lanceolatis acutis apiculatis, interioribus spathulato-oblongis margine subscariosis apice lacerato-ciliatis, receptaculo ovato.

HAB. In open sandy places common, near the Villa de Arrayas, Province of Goyaz. April, 1840.

Annuum, subpedale, depressum, ramosum, ramis patulis elongatis foliosis. Folia 1-1½ poll. longa, 6-9 lin. lata: petioli 2-4 lin. longi. Pedunculi 4-6 lin. longi, unibracteati, sparse pilosi. Involucrum 3-lin. longum. Receptaculum ovatum, nudum, foveolatum. Corollæ tubulosæ, ad faucem non ampliatæ, 5-dentatæ, dentibus ovatis obtusis puberulis, pallide purpureæ. Styli rami cylindrici, obtusi, exserti. Achænium oblongum, compresso-tetragonum, pilosiusculum, nigrum.

Near O. *Sideritis,* DC. I once thought this might be O. *villosum,* DC. (*Praxelis villosa,* Cass.), but that seems to be a much more villous plant.

CONOCLINIUM, *DC.*

4231 et 4231 (bis.) C. *scandens;* fruticosa ramosa scandens, ramis teretibus striatis piloso-pubescentibus foliosis, foliis oppositis petiolatis late ovatis acutis vel subacuminatis basi cordatis 5-7-nerviis margine minute calloso-denticulatis membranaceis rugosis utrinque pubescentibus, panicula laxa foliosa, ramis oppositis brachiatis, capitulis ad apices ramulorum in glomerulo globoso aggregatis 7-10-floris, involucri squamis biserialibus oblongis acutis dorso puberulis et ad apicem resinoso-glanduloso-punctatis 3-

nerviis, receptaculo conico, achænio oblongo 5-angulato pilosiusculo.

HAB. Dry bushy places between Arrayas and San Domingos, Province of Goyaz. May, 1840.

Frutex alte scandens, ramosissimus, ramis brachiatis, elongatis. Folia 2½-4 poll. longa, 1½-2½ poll. lata: petioli semiteretes, 4-10-lin. longi. Involucrum 1½-lin. longum. Corollæ tubulosæ ad faucem non ampliatæ, glabræ, 5-dentatæ, dentibus oblongis obtusis extus resinoso-punctatis. Styli rami cylindrici, longe exserti, apice subclavati. Pappus uniserialis, inæqualis, corolla brevior, setis scabriusculis sordidis.

CAMPULOCLINUM, *DC.*

3835. C. *hirsutum*; caule herbaceo erecto tereti striato ramoso hirsuto, foliis oppositis petiolatis ovatis obtusis basi acutis triplinerviis serrato-dentatis utrinque piloso-hispidis, panicula terminali subcymosa hirsuta, capitulis pedicellatis circiter 40-floris, involucri squamis 3-seriatis æqualibus, exterioribus ovato-lanceolatis acutis hirsutis multinerviis, interioribus lineari-spathulatis acutis ciliatis 1-3-nerviis extus ad apicem resinoso-punctatis, receptaculo convexo alveolato, achænio acute 5-angulato pilosiusculo.

HAB. Dry upland Campos near Arrayas, Province of Goyaz. April, 1840.

Herba perennis, 2½ pedalis. Folia pellucido-punctata, 1½-2-poll. longa, 8-12-lin. lata. Petioli 3-4½ lin. longi. Involucrum campanulatum, 6 lin. longum. Receptaculum nudum. Corollæ purpuracentes, tubulosæ, 5-dentatæ, dentibus extus glanduloso-resinoso-punctatis. Pappus uniserialis, setosus, setis corolla paulo brevioribus, scabris, sordidis.

Allied to C. *paniculatum*, DC.

3816. C. *alternifolium*; caule herbaceo erecto tereti striato villoso alterne ramoso, foliis alternis petiolatis ovatis acutis basi acutis cuneatisve trinerviis crenato-serratis ciliatis utrinque sparse piloso-villosis subtus minute resinoso-glanduloso-punctatis, capitulis paucis subcorymbosis longe pedicellatis late campanulatis 170-floris, involucri squamis 3-seriatis longit. subæqualibus, exterioribus late ovatis acutis hirsutis, interioribus spathulato-oblongis obtusis ad apicem pilosis et resinoso-punctatis, achænio acute 5-angulato ad angulos piloso, pappo subpaleaceo, setis brevibus acuminatis scabris valde inæqualibus.

HAB. Margins of woods near Villa de Arrayas, Province of Goyaz. April, 1840.

Annua, bipedalis. Folia membranacea, 2½ poll. longa, 15-lin. lata. Petioli 4-8 lin. longi, villosi. Involucrum late campanulatum, 3-lin. longum. Receptaculum conicum, nudum. Corollæ pallide purpureæ, extus resinoso-punctatæ, pappo multo longiores.

Well distinguished from all the other species of the genus by its alternate leaves, and short somewhat paleaceous pappus.

EUPATORIUM, *Tourn.*

Ser. II. IMBRICATA, *DC.*

3827. E. *Arrayanum*; fruticosum, caule erecto tereti striato piloso-scabrido ramoso, foliis oppositis brevissime petiolatis lanceolatis utrinque acutis apice mucronatis triplinerviis integerrimis supra glaberrimis parce resinoso-punctatis subtus reticulatis pubescentibus creberrime resinoso-punctatis, capitulis ad apices ramulorum intra duo ultima folia solitariis sessilibus aut breviter pedicellatis ovato-cylindraceis 50-circiter-floris; involucri squamis arcte imbricatis obtusis ciliatis striatis, achænio ad angulos vix scabrido.

HAB. Near Villa de Arrayas, Province of Goyaz. April, 1840.

Frutex 3-6-pedalis. Folia 1½-2-poll. longa, 4-6-lin. lata, supra viridia, subtus rufa. Capitula 6-lin longa. Pappus sordidus.

Near E. *multiflosculosum*, DC.

4210. E. *subserratum;* suffruticosum, caule erecto tereti striato villoso-tomentoso ramoso, ramis ad apicem paniculatis, foliis oppositis brevi-petiolatis ovato-lanceolatis longe acuminatis basi rotundatis triplinerviis integriusculis vel ad medium subserratis supra piloso-scabridis subtus villoso-tomentosis, corymbis ramos terminantibus subsimplicibus, capitulis longe pedicellatis ovatis circiter 80-floris, involucri squamis arcte imbricatis obtusis ciliatis striatis, achænio ad angulos scabrido.

Hab. Sandy bushy places between Arrayas and San Domingos, Province of Goyaz. May, 1840.

Suffrutex 5-6 pedalis, ramosus. Folia 3-3½ poll. longa, 15 lin. circiter lata, membranacea. Petioli 3-5 lin. longi. Pedicelli angulati, 6-7 lin. longi. Capitula 6-lin. longa. Achænium acute 5-angulatum. Pappus sordidus.

Allied to E. *Maximiliana,* Schrad., but very distinct.

3825. E. *mucronatum;* suffruticosum, ramis teretibus striatis hispido-villosis, foliis oppositis longe petiolatis ovato-lanceolatis longe acuminatis basi cuneato-attenuatis triplinerviis distanter grosse et obtuse mucronato-serratis utrinque sparse villosis, corymbis terminalibus trichotomis, capitulis longe pedicellatis cylindricis 40-55-floris, involucri squamis arcte imbricatis obtusis ciliatis striatis, achænio ad angulos scabriusculo.

Hab. Bushy places near Villa de Arrayas, Province of Goyaz. April, 1840.

Suffrutex, ramosus. Folia 4½-6 poll. longa, 1½-2 poll. lata. Petioli 6-9 lin. longi. Pedicelli 4½-7½ lin. longi. Capitula 5 lin. longa, 1½-2½ lin. lata. Pappus albidus.

Near E. *Maximiliana,* Schr., and E. *odoratum,* Linn., but sufficiently distinct from both.

4214. E. *extensum;* fruticosum, ramis teretibus striatis hispido-villosis, foliis oppositis petiolatis oblongo-lanceolatis acuminatis basi cuneatis triplinerviis integris utrinque villosis, corymbis terminalibus compositis, capitulis pedicellatis cylindricis 40-50-floris, involucri squamis arcte imbricatis obtusis ciliatis striatis, achænio ad angulos scabrido.

HAB. Bushy places between Capella da Posse and San Pedro, Province of Goyaz. May, 1840.

Frutex vel suffrutex, diffuse ramosus. Folia 3-3½ poll. longa, 10-15 lin. lata. Petioli 2-3 lin. longi. Pedicelli 4-6 lin. longi. Pappus stramineus.

Near E. *conyzoides*, Vahl. from which it differs in being villous, and in having entire leaves and more numerous florets.

4206. E. *ramosissimum;* fruticosum ramosissimum, ramis teretibus striatis pubescenti-hirtis fastigiatis, foliis oppositis petiolatis ovato-oblongis utrinque acutis triplinerviis ad medium dentato-serratis supra pilosiusculis demum glabratis subtus pubescentibus creberrime minute resinoso-punctatis, corymbis terminalibus compositis fastigiatis, capitulis pedicellatis 26-floris, involucri squamis arcte imbricatis obtusis ciliatis sub-3-nerviis, achænio angulato, ad angulos scabriusculo.

HAB. Margins of woods near Villa de Arrayas, Province of Goyaz. March 1840.

Frutex 3-4-pedalis. Folia 1-1½ poll. longa, 5-8 lin. lata. Capitula 4½ lin. longa. Pappus substramineus.

Allied to E. *tectum*, Gardn., from which it differs in its broader serrated leaves, and more numerous florets.

3829. E. *crenatum;* fruticosum, ramis teretibus dense piloso-hispidis, foliis oppositis breviter petiolatis ovato-ellipticis utrinque obtusis triplinerviis inferioribus grosse crenatis superioribus integris supra piloso-scabridis subtus dense piloso-tomentosis, corymbis ad apices ramulorum confertis, capitulis brevi-pedicellatis 25-floris, involucri cylindrici squamis arcte imbricatis obtusis ciliatis striatis, achænio ad angulos scabriusculo.

HAB. Near Villa de Arrayas, Province of Goyaz. April, 1840.

Frutex 2-3 pedalis. Folia 1-2 poll. longa, 9-15 lin. lata,

Petioli 1½ lin. longi. Pedicelli 1½-2 lin. longi. Capitula 4½ lin. longa. Pappus sordidus.

In habit and general appearance this species agrees with my E. *pungens*, from which it is principally distinguished by its nearly sessile leaves, and obtuse, not acuminated, involucral scales; notwithstanding the pungent scales of E. *pungens*, it should perhaps be referred to the imbricated rather than the subimbricated series, and range along with the present species.

4217. E. *ferrugineum*; fruticosum erectum ramosum, ramis teretibus striatis pubescenti-scabridis, foliis oppositis petiolatis late ovatis utrinque obtusis apice mucronatis trinerviis integris vel vix subdenticulatis utrinque velutino-tomentosis et creberrime resinoso-punctatis, corymbis terminalibus compositis, capitulis ovato-cylindraceis pedicellatis 25-floris, involucri squamis arcte imbricatis obtusis ciliatis vix striatis, achænio ad angulos hispido.

Hab. Dry bushy places between San Domingos and Capella da Posse, Province of Goyaz. May, 1840.

Frutex 3-pedalis. Folia 1½-2 poll. longa, 10-18 lin. lata, membranacea, rufescentia. Petioli 2½-4 lin. longi. Pedicelli 1½-3 lin. longi. Capitula 5 lin. longa. Pappus rufescens.

Somewhat allied to the last species, but very distinct.

3824. E. *myriocephalum*; suffruticosum, ramis teretibus striatis pubescentibus, foliis oppositis petiolatis ovatis vel ovato-lanceolatis acuminatis basi acutis triplinerviis ad medium grosse crenato-serratis supra glabriusculis subtus puberulis et minute resinoso-glandulosis, corymbis terminalibus compositis, capitulis pedicellatis cylindricis gracilibus 11-floris, involucri squamis arcte imbricatis obtusis ciliatis striatis, achænio ad angulos scabrido.

Hab. Dry bushy places Arrayas, Province of Goyaz. March, 1840.

Suffrutex 4-5 pedalis. Folia 2-3½ poll. longa, 9-18 lin. lata, membranacea, supra viridia, subtus pallida. Pedicelli 2-lin. circiter longi. Capitula 4½ lin. longa. Pappus albidus.

Allied to E. *graciliflorum*, DC.

3823. E. *pictum;* suffruticosum, ramis teretibus striatis hispido-villosis, foliis oppositis petiolatis ovato-oblongis acutis basi cuneato-attenuatis trinerviis grosse dentato-serratis utrinque sparse villosis, corymbis terminalibus compositis trichotomis, capitulis subsessilibus cylindricis 16-floris, involucri squamis imbricatis basi adpressis glabris striatis ciliatis apice foliaceis subpatulis pilosis, achænio ad angulos scabriusculo.

Hab. Margins of woods near Villa de Arrayas, Province of Goyaz. May, 1840.

Suffrutex 3-4-pedalis. Folia 2-3½ poll. longa, 1-1½ poll. lata, membranacea. Capitula 4½ lin. longa. Pappus sordidus.

3819. E. *subtruncatum;* herbaceum, caule erecto tereti striato hispido-hirsuto ad apicem ramoso, foliis oppositis petiolatis ovato-oblongis acutis basi subtruncatis tri- vel subquintupli nerviis crenato-serratis supra piloso-scabridis subtus villoso-subtomentosis, corymbis terminalibus compositis trichotomis, capitulis breviter pedicellatis cylindricis 16-floris, involucri squamis imbricatis arcte adpressis striatis, externis obtusis ad apicem pilosis, intimis acutis ciliatis, achænio ad angulos scabriusculo.

Hab. Near Villa de Arrayas, Province of Goyaz. April, 1840.

Herba perennis, 1½-2-pedalis. Folia 3-4½ poll. longa, 15-24 lin. lata. Capitula 4½-lin. longa. Pappus albidus.

Near the last species, but well distinguished by its different leaves and involucral scales.

Ser. II. Subimbricata, *DC.*

3833. E. *dentatum;* fruticosum, ramis erectis teretibus striatis cinereo-piloso-tomentosis, foliis alternis sessilibus cuneato-oblongis obtusis penniveniis inferioribus integris superioribus ad apicem 3-5 dentatis utrinque tomentosis, panicula terminali dichotoma, capitulis subsessilibus glomerulis 3-4-floris, involucri squamis 3-seriatis imbricatis tomentosis 3-nerviis, externis parvis ovatis obtusis intimis oblongo-lanceolatis acutis, achænio piloso.

HAB. Dry upland grassy Campos near Villa de Arrayas, Province of Goyaz. March, 1840.

Frutex bipedalis. Folia 12-15 lin. longa, 3-4 lin. lata. coriacea. Capitula 3-lin. longa. Corolla albida, glabra. Styli rami apice valde clavati. Pappus stramineus.

This will range along with E. *campestre,* DC., but is very distinct from it and every other described species.

4215 et 4860. E. *pulchrum;* caule herbaceo erecto tereti striato piloso-tomentoso simplici, foliis alternis brevipetiolatis oblongis vel oblongo-ellipticis obtusis basi acutis triplinerviis ad medium serrato-dentatis coriaceis, corymbis terminalibus, capitulis ad apices ramulorum confertis sessilibus 4-floris, involucri oblongi squamis 3-seriatis laxe imbricatis oblongis acutis striatis subciliatis, exterioribus brevioribus obtusis ad apicem pilosis, achænio pilosiusculo.

Chromolæna alternifolia, *Gardn. in Hook. Lond. Journ. of Bot.* 5, *p.* 465.

HAB. Dry Campos near Nossa Senhora d'Abadia, Province of Goyaz (n. 4215), and on dry hills near Morro Velho, Province of Minas Geraes (n. 4860). May and September, 1840.

Herba perennis, basi sublignosa, 1½-2-pedalis. Folia alterna, 15-18 lin. longa. Corolla violacea. Pappus sordidus.

Near E. *subalternifolium,* DC. In the Goyaz specimens the leaves are narrower, and the corymb laxer than in those from Minas.

3247. E. *revolutum* ; caule herbaceo erecto gracili tereti striato piloso-pubescente simplici, foliis alternis sessilibus oblongis utrinque attenuatis trinerviis coriaceis margine revolutis ad medium subdentatis pulchre reticulatis supra glaberrimis subtus pilosiusculis creberrime minute glanduloso-punctatis, corymbo terminali conferto, capitulis ad apices ramulorum confertis sessilibus 12-floris, involucri squamis

3-seriatis, intimis linearibus acutis ad apicem ciliatis externis ovato-oblongis calloso-acutis striatis, dorso glanduloso-punctatis, achænio basi piloso.

Hab. Arid campos, near the Mission of Duro, Province of Goyaz. Oct. 1839.

Herba perennis, pedalis. Folia pollicem longa, 3-4 lin. lata. Capitula 4½ lin. longa. Corolla violacea. Pappus albidus. Apparently allied to E. *dictyophyllum*, DC., from which it differs in the corymb not being paniculate, and in having more than double the number of florets which that species is said to have. I possess specimens of a plant nearly related to the present from Claussen's Brazilian Collection, which may be characterized as follows:—

(E. *Claussenii*; caule herbaceo erecto gracili tereti basi striato ad apicem angulato pubescente subsimplici, foliis alternis petiolatis late linearibus utrinque attenuatis coriaceis basi trinerviis reticulatis versus apicem subdentatis supra glabris subtus pubescentibus, corymbo terminali conferto, capitulis ad apices ramulorum sessilibus glomeratis 5-floris, involucri squamis 2-seriatis imbricatis 3-nerviis, externis apice callosis reflexis dorso puberulis intimis acutis, achænio pilosiusculo.

Hab. Province of Minas Geraes, Brazil. *Claussen.*

Herba perennis, pedalis et ultra. Folia 12-15 lin. longa, 2 lin. lata. Capitula 3½-lin. longa. Corolla violacea. Pappus stramineus.)

3834. E. *albescens*; fruticosum, ramis teretibus striatis petiolis pedunculisque cinereo-tomentosis, foliis oppositis petiolatis oblongo-lanceolatis utrinque acutis triplinerviis crenato-dentatis supra piloso-scabridis subtus tomentosis reticulatis, paniculis terminalibus ramosis, ramis corymbosis, capitulis pedicellatis 10-11-floris, involucri campanulati squamis 3-seriatis imbricatis oblongis obtusis dorso puberulis 3-nerviis, achænio glabro resinoso-punctato.

Hab. Margins of woods, near Villa de Arrayas, Province of Goyaz. April, 1840.

Frutex ramosus, 6-pedalis. Folia 2½-3½ poll. longa, 10-12 lin. lata. Capitula 3½ lin. longa. Corolla alba. Pappus albus.

As a species, this will range along with E. *canescens*, Vahl. It does not, however, seem to be nearly allied to it or to any of the neighbouring species.

Ser. III. EXIMBRICATA, *DC.*

3832. E. *galiopsifolium*; caule erecto tereti striato glanduloso-villoso, foliis oppositis petiolatis late ovatis acutis basi truncatis vel subcordatis trinerviis grosse crenato-dentatis utrinque sparse pilosis, corymbis ad apices ramorum 3-5-cephalis, capitulis pedicellatis 150-floris, corollis glabris, involucri squamis 3-seriatis subæqualibus acuminatis dorso puberulis, achænio ad apicem pilosiusculo.

HAB. Shady places, near Villa de Arrayas, Province of Goyaz. April, 1840.

Annua 2½-pedalis. Folia 3 poll. longa, 1½ poll. lata, membranacea: petioli 6-10 lin. longi. Capitula 4 lin. longa. Corolla purpurea. Pappus albidus.

Near E. *innumerosum*, DC.

3270. E. *trigonum*; herbaceum, caule erecto versus apicem obtuse triangulato striato puberulo-velutino, foliis alternis sessilibus obovato-ellipticis utrinque obtusis penniveniis reticulatis serrato-dentatis supra glabriusculis subtus puberulo-velutinis, paniculis terminalibus corymbosis dichotomo-ramosis, capitulis pedicellatis 5-floris, involucri squamis oblongo-lanceolatis acuminatis puberulis 3-nerviis biseriatis, externis brevioribus, achænio piloso.

HAB. Upland campos, Mission of Duro, Province of Goyaz. Oct. 1839.

Herba perennis, 2-2½-pedalis. Folia 2-2½ poll. longa, 1-1½ poll. lata, membranacea, supra viridia, subtus pallida. Capitula 5-lin. longa. Corolla alba. Pappus sordidus.

Judging from the description, apparently allied to E. *orgyale*, DC.

KANIMIA, *Genus novum.*

CHAR. GEN.—*Capitulum* 4-florum. *Receptaculum* planum

nudum. *Involucrum* 4-phyllum, adjecta aut ad basin aut infra basin bracteola. *Corollæ* tubulosæ, ad faucem dilatatæ. *Achænium* angulatum. *Pappus* 2-serialis, setis pilosis rigidis scabridis æqualibus.—Herbæ *vel suffrutices erectæ.* Folia *opposita, sessilia, interdum verticillata, elliptica aut linearia.* Capitula *spicata, aut corymbosa.* Corolla *albida.*

The only essential character which distinguishes this genus from *Mikania* is the double pappus and the only two species which I know have the same erect habit as those of De Candolle's first section of *Mikania.* There is, however, a peculiarity in their look which at first sight bespeaks a difference. The capitula are not only much larger, but the involucral scales are very nearly as long as the florets, and the pappus is much more rigid than in *Mikania.* I have carefully examined the nature of the pappus in seven erect species of *Mikania,* which I possess in my Herbarium, and in all of them find it to be decidedly single. I expect, however, that De Candolle's two first species will be found to be congeners with the present. The name is an anagram of *Mikania.*

3836. Kanimia *palustris;* herbacea erecta glaberrima, caule simplici basi tereti striato folioso apice angulato subaphyllo, foliis oppositis sessilibus linearibus obtusis coriaceis integerrimis 5-nerviis, nervis parallelis utrinque prominulis, corymbo terminali trichotomo, capitulis pedicellatis, bracteola oblongo-lineari invol. breviore, involucri squamis oblongis acutis striatis apice subciliatis, achænio glabro.

Hab. Marshy campos between Villa de Natividade and Conceição, Province of Goyaz. Feb. 1840.

Herba perennis, 2-3-pedalis. Folia 3-4-poll. longa, 2-2½ lin. lata. Pedicelli compressi, 3-lin. longi. Capitula 6-lin. longa. Pappus rufescens, setis apice clavatis.

4866. Kanimia *strobilifera,* Gardn.—*Mikania strobilifera, Gardn. in Hook. Lond. Jour. of Bot. 5. p. 479.*

MIKANIA, *Willd.*

4228. M. (Spiciformes) *consanguinea*; fruticosa scandens ramis teretibus pube ferruginea subvillosis, foliis petiolatis ovato-ellipticis acutis basi subcordatis mucronato-serrato-dentatis supra piloso-scabridis subtus tomentosis, racemis spicatis in paniculam dispositis, capitulis secus rachin sessilibus approximatis, bracteola oblonga acuta pilosa invol. multo breviore, involucri squamis oblongis obtusis striatis pilosis, achænio glanduloso-piloso.

HAB. Bushy places, near Villa de Arrayas, Province of Goyaz. March, 1840.

Frutex scandens. Folia 3-3½ poll. longa, 15-20 lin. lata, membranacea; petioli 4 lin. longi. Involucrum 2 lin. longum. Pappus sordidus.

Akin to M. *scabra*, DC., from which it differs in its subcordate leaves and sessile capitula.

4230. M. (Cordiformes) *thunbergiæfolia*; suffruticosa scandens, caule scabrido ramisque obtuse hexagonis junioribus cinereo-piloso-pubescentibus, foliis petiolatis late cordatis acuminatis in sinu subcuneatis sinuato-dentatis supra piloso-scabridis subtus piloso-pubescentibus, pedunculis axillaribus terminalibusque apice corymbosis, capitulis breviter pedicellatis, involucri squamis 4 oblongis dorso piloso-pubescentibus quorum 3 acutis, unica obtusa, bracteola lineari-acuminata, achænio glabro.

HAB. Bushy places, near Villa de Arrayas, Province of Goyaz. April, 1840.

Folia 3 poll. longa, 2 poll. lata. Involucrum 3½ lin. longum. Pappus pallide rufescens.

Apparently very near M. *gonoclada*, DC., but the stem and branches are not acutely hexagonous, nor are the angles villous, and in that species the leaves are not said to be scabrous on the upper surface. In the present plant the pappus is, moreover, rather stramineous than rufous.

3271. M. (Angulatæ) *subcymosa*; suffruticosa volubilis glaberrima, caule striato, ramis angulatis, foliis petiolatis sub-

hastato-ovato-oblongis acuminatis basi cordatis 3-nerviis denticulatis, ramis axillaribus apice corymbum compositum fastigiatum gerentibus, capitulis ad apices ramulorum pedicellatis subumbellatis, bracteola oblongo-lineari acuta parva, involucri squamis lineari-oblongis acutis 3-nerviis achæniisque glabris.

Hab. Bushy places near Villa de Natividade, Province of Goyaz. February, 1840.

Folia 3½ poll. longa, 15-18 lin. lata, membranacea. Petioli pollicares. Involucrum 2½ lin. longum. Pappus pallide rufescens. Near M. *campanulata*, Gardn.

The following is a list of such species of *Eupatoriaceæ*, belonging to my Goyaz collections, as I find to have been already published:

3265, 3267, 3813 et 4201. Ooclinium *pedunculare*, DC.
3812. „ *Sideritis*, DC.
3815. „ *capillare*, DC.
3269. Bulbostylis *micrantha*, Gardn.
4209. Eupatorium *obscurum*, DC.
4205, 3826, 4211 et 4208. E. *pungens*, Gardn.
4219, 4220 et 4218. E. *psiadeæfolium*, DC.
4212. E. *conyzoides*, Vahl.
3823. E. *Maximiliani*, Schrad.
3830. E. *Piauhyense*, Gardn. var. β *alternifolium*, Gardn.
4227. „ „ var. γ *angustifolium*, Gardn.
4224. E. *paniculatum*, Schrad.
3272. Mikania *scabra*, DC.

Kandy, Ceylon, May 1, 1847.

Contributions towards a FLORA OF BRAZIL, *being the Characters of several new species of* COMPOSITÆ, *belonging to the tribes* MUTISIACEÆ *and* NASSAUVIACEÆ; *by* GEORGE GARDNER, ESQ., F.L.S.

(Continued from the preceding article.)

RHODACTINEA, *Genus novum.*

CHAR. GEN.—*Capitulum* multiflorum, homogamum. *Involucrum* ovato-cylindraceum, multiseriale, imbricatum,

squamis obsolete multinerviis coriaceis, exterioribus ovatis pungentibus, intimis linearibus erectis adpressis. *Receptaculum* piloso-fimbrilliferum. *Flores* omnes bilabiati, labio exteriore amplo 4-dentato, interiore lineari-filiformi simplici: *peripheriæ* plurimi elongati radiati; *disci* pauci duplo breviores. *Filamenta* libera. *Antheræ* basi bidentatæ. *Stylus* subexsertus, breviter et oblique bilobus. *Achænium* turbinatum, dense sericeo-villosum. *Pappus* 1-serialis, in peripheria plumosus, in disco e setis rigidis glabris reflexis constans.—Frutex *Brasiliensis,* ramis *teretibus,* aculeis *stipularibus geminis.* Folia *alterna, subsessilia, obovato-oblonga, mucronata, pennivenia.* Capitula *ad apices ramulorum solitaria, sessilia, magna.* Corollæ *roseæ.*

4268. Rhodactinea *rosea.* Barnadesia rosea, Lindl. Bot. Reg. 1843, t. 29. Walp. Rep. Bot. 2. p. 678. Hook. Bot. Mag. t. 4232.

HAB. Woods between Arrayas and San Domingos, Province of Goyaz. May, 1840.

DESCR. Frutex ramosissimus, spinosus, 3-4-pedalis. Folia alterna, subsessilia, obovato-oblonga, acuta, mucronata, basi attenuata, membranacea, pennivenia, venis utrinque 2, adpresse pilosiuscula, supra viridia, subtus pallida, 2½-3½ poll. longa, 1-1½ poll. lata. Spinæ patentes, aciculares, rigidæ, basi distinctæ, 7 lin. longæ. Capitula 2 poll. longa. Involucrum ovato-cylindraceum, multiseriale, imbricatum, squamis obsolete multinerviis, coriaceis, pubescentibus, fulvis; exterioribus ovatis pungentibus; intimis linearibus acuminatis, erectis, adpressis. Receptaculum paleis capillaceis fulvis dense obsitum. Flosculi omnes hermaphroditi bilabiati: labio exteriore ligulato, quadrifido, extus fulvo-villoso; interiore angustissimo, simplici, lævi: peripheriæ 9, elongati, radiati, 16 lin. longi; disci 3-8 lin. longi. Filamenta libera, complanata, glabra: antheræ in tubum coalitæ, appendicula ligulata obtusa rigida coronatæ, basi bidentatæ, dentibus brevibus callosis. Stigma oblique bilobum, lobis obtusis. Achænia ubique sericeo-villosissima. Pappus difformis: peripheriæ eleganter plumosus; disci setosus, setis rigidis glabris reflexis.

Observ.—The plant, on which I have established this genus, was first described and figured by Professor Lindley, in 1843, under the name of *Barnadesia rosea;* and it has again been figured by Sir William Hooker, with the same name, in 1846, in both cases from living specimens. Lindley has remarked that it differs from all the described species of *Barnadesia,* in having soft straight, not spirally twisted, hairs on the receptacle; that the stamens are not monadelphous; and that in his specimen there were no central tubular florets. All these points I find corroborated in my dried specimens, except the last; for though there are no central tabular florets, like those found in *Barnadesia,* yet in all the capitula which I have examined, there are three florets very different from those of the circumference. Like the others they are hermaphrodite and bilabiate, but the tubular part is very much shorter and wider, and the pappus is not plumose, for it consists of rigid, glabrous, reflexed setæ, exactly similar to those of the central tubular florets of *Barnadesia.* One of these florets is represented by Sir W. Hooker: he considers it merely an undeveloped state of the others. In Lindley's specimen they do not seem to have been produced; but the part of the receptacle which he alludes to as pouring out honey, is no doubt the place where they should have been. Dr. Lindley has committed an oversight in representing the outer lip of the corolla as bifid in place of quadrifid. *Barnadesia laxa,* of Don, approaches the present plant in having free filaments, though he describes it as having a central tubular floret. Perhaps when better known it may be found to be a true congener, and if so, my generic name must give place to *Penthea,* the sectional one of Don.

The plant, from which Professor Lindley's figure was made, was, I believe, brought from the Province of Minas Geraes by Claussen. The history of the Kew plant is not given: Sir W. Hooker remarks that he has dried specimens, both from Peru and Brazil.

FLOTOVIA, *Spreng.*

Sect. ERINESA, *DC.*

4944. F. *Sprengeliana ;* foliis breviter petiolatis oblongo-lanceolatis mucronatis utrinque acutis triplinerviis supra glabriusculis subtus adpresse subvillosis, capitulis ad apices ramulorum solitariis subsessilibus, circiter 60-floris, involucri campanulati squamis inermibus, exterioribus ovatis acutis dorso pubescentibus margine ciliatis, intimis linearibus extus villosis apice demum reflexis, corollis palmatis, lobis extus villosis, tubo extus glabro intus dense villoso.

HAB. Wooded hills near Tapinhacanga, Province of Minas Geraes. August, 1840.

Frutex 6-pedalis, ramosus, spinosus, ramis striatis glabris, ramulis pubescentibus. Spinæ geminæ, basi connatæ, 4½-8 lin. longæ. Folia 2½ poll. longa, 10½ lin. lata, supra viridia, subtus pallida. Capitulum 15 lin. longum, nitidum.

From the same locality I have a specimen which agrees with the present plant in every respect, except in being entirely destitute of spines, and in the more elliptical leaves. It may be distinguished thus:—

β. *inermis ;* ramis inermibus, foliis elliptico-oblongis utrinque obtusiusculis.

1749. F. *Lessingiana ;* spinis brevibus semiteretibus supra pubescentibus, foliis breviter petiolatis elliptico-oblongis apice setoso-spinosis utrinque obtusiusculis triplinerviis supra glabriusculis subtus adpresse pilosis, capitulis ad apices ramulorum solitariis subsessilibus 50-circiter floris, involucri campanulati squamis mucronatis, exterioribus ovatis obtusis dorso pubescentibus, intimis linearibus villosis apice demum reflexis, corollis palmatis, lobis extus villosis, tubo extus glabro intus dense villoso.

HAB. Serra de Araripe. Province of Ceara. Nov. 1838.

Frutex ramosus, spinosus, 3-4-pedalis. Spinæ geminæ, deflexæ, 2½ lin. longæ. Folia 1½-2 poll. longa, 8-11 lin. lata. Capitulum 15-lin. longum.

Very near the former species, though well distinguished

from it, and from all others, by the short spines, which are flattened and pubescent on their upper surface.

4946. F. *Doniana;* foliis brevi-petiolatis apice spinosis oblongis utrinque obtusiusculis trinerviis supra adpresse pilosis subtus glabris junioribus sericeo-villosis, capitulis ad apices ramulorum solitariis sessilibus 20-floris, involucri oblongo-campanulati squamis pungentibus glabriusculis ciliatis nitidis, exterioribus ovatis acutis, intimis linearibus acuminatis erectis, corollis palmatis, lobis extus villosis, tubo extus glabro intus villoso.

HAB. Near Formigas, in the Sertao of the Province of Minas Geraes. July, 1840.

Frutex ramosus, spinosus, 5-pedalis. Spinæ geminæ, 6 lin. longæ. Folia 1½ poll. longa, 7½ lin. lata. Capitula 1½ poll. longa.

This species has longer and narrower capitula than any other known to me, and is well distinguished from those to which it most nearly approaches by the inner involucral scales being erect, not reflexed.

4945. F. *fodinarum;* foliis petiolatis apice spinosis elliptico-oblongis acutis basi obtusis trinerviis utrinque ramisque sparse villosis, capitulis ad apices ramorum solitariis sessilibus 25-floris, involucri campanulati squamis piloso-pubescentibus, exterioribus ovatis acutis spinosis, intimis linearibus pungentibus erectis, corollis palmatis ubique villosis.

HAB. In a wood at the foot of the Serra de Piedade, Province of Minas Geraes. Sept. 1840.

Frutex ramosus, spinosus, 4-pedalis. Spinæ geminæ, deflexæ, 2 lin. longæ. Folia 2-2½ poll. longa, 10½-14 lin. lata. Capitula 15 lin. longa.

Distinguished from the preceding species by the villosity of the branches and leaves, the larger leaves, shorter capitula, and more spinose involucral scales.

2906. F. *Candolleana;* tota fulvo-velutino-tomentosa, foliis brevi-petiolatis oblongis utrinque obtusis apice mucronatis basi trinerviis margine revolutis, capitulis ad apices ramulorum solitariis sessilibus 25-30-floris, involucri campa-

nulati squamis piloso-pubescentibus, exterioribus ovatis obtusis vix mucronatis, intimis linearibus obtusiusculis apiculatis villosis demum reflexis, corollis palmatis, lobis extus villosis, tubo extus glabro intus villoso.

HAB. Serra da Batalha, District of the Rio Preto, Province of Pernambuco. Oct. 1839.

Frutex ramosus, spinosus, 4-5-pedalis. Spinæ geminæ, 6 lin. longæ. Folia 1½ poll. longa, 7½ lin. lata. Capitula 15 lin. longa.

4943. F. *imbricata;* inermis, foliis apice spinosis sessilibus oblongis utrinque obtusis trinerviis glaberrimis valde reticulatis imbricatis, capitulis ad apices ramorum solitariis sessilibus 45-floris, involucri late campanulati squamis laxe imbricatis tomentosis pungentibus, exterioribus ovatis acutis, intimis linearibus acuminatis erectis, corollis palmatis, lobis extus villosis, tubo extus glabro intus villoso.

HAB. Arid mountain tops in the Diamond District. Aug. 1840.

Frutex ramosus, 2-pedalis. Folia 15-18 lin. longa, 7 lin. lata. Capitula 15 lin. longa.

3869. F. (?) *latifolia;* glaberrima, foliis inermibus petiolatis obovato-ellipticis obtusis basi subacutis tripli-vel subquintuplinerviis, capitulis ad apices ramulorum solitariis sessilibus, involucri squamis mucronatis, exterioribus ovatis obtusis, intimis linearibus acuminatis erectis.

HAB. In a wood near Arrayas, Province of Goyaz. April, 1840.

Frutex 4-5-pedalis, ramosus, spinosus. Spinæ geminæ, vix 2 lin. longæ. Folia 3½-4 poll. longa, 2-2¼ poll. lata. Involucrum 20 lin. longum.

As the whole of the florets have fallen from the only specimen I possess of this species, I have not been able to determine whether or not it is a true *Flotovia.* It agrees with the preceding species in habit, but differs from them all in the large size of its leaves.

4949 et 4951. F. *varians;* subscandens, foliis spinosis brevipetiolatis oblongis vel oblongo-lanceolatis acutis basi obtusis triplinerviis utrinque sparsis adpresse villosis, ramis pubescentibus, capitulis subpaniculatis pedicellatis 15-20-floris, involucri oblongo-campanulati squamis spinosis glabriusculis ciliatis, exterioribus ovatis obtusis, intimis linearibus obtuse acuminatis subreflexis, corollis palmatis extus glabris, tubo intus villoso.

Hab. Woods near Formigas, Province of Minas Geraes. July, 1840.

Frutex subscandens, ramosus, spinosus. Spinæ geminæ, 2-7½ lin. longæ. Folia 2½-4 poll. longa, 9-15 lin. lata. Capitula 6 lin. longa.

4267 et 4950. F. *vagans;* subscandens, foliis spinosis brevi-petiolatis oblongo-ellipticis utrinque obtusis 3-nerviis supra glaberrimis subtus tomentosis, ramis pubescenti-tomentosis, capitulis subpaniculatis pedicellatis 20-floris, involucri ovato-campanulati squamis tomentosis, exterioribus ovatis obtusis spinosis, intimis linearibus acutis reflexis, corollis palmatis, lobis extus villosis, tubo extus glabro intus villoso.

Hab. Woods near Capella da Passe, Province of Goyaz (4267), and bushy places near Formigas, Province of Minas Geraes (4950). May and July, 1840.

Frutex subscandens, ramosus, spinosus. Spinæ geminæ, 7-10 lin. longæ. Folia 2½-3½ poll. longa, 12-18 lin. lata. Capitula 6 lin. longa.

The Goyaz specimens are a little more tomentose than the Minas ones, and the leaves and the spines somewhat smaller, otherwise they are alike.

4952. F. *floribunda;* subscandens, glaberrima, foliis spinosis brevi-petiolatis oblongis utrinque acutiusculis triplinerviis margine revolutis, pedunculis axillaribus folio brevioribus 2-5-cephalis, capitulis sessilibus 13-floris, involucri ovato-campanulati squamis spinosis ciliatis laxe imbricatis, exterioribus ovatis, intimis linearibus reflexis, corollis palmatis extus villosis, tubo extus glabro intus villoso.

Hab. Bushy places near Formigas, Province of Minas Geraes. July, 1840.

Frutex subscandens, ramosus, spinosus. Spinæ geminæ, validæ, divaricatæ, 6-9 lin. longæ. Folia 15-18 lin. longa, 6-7½ lin. lata. Capitula 4½ lin. longa.

SERIS, *Less.*

4787. S. *amplexifolia;* suffruticosa, caule erecto basi simplici folioso apice dichotomo-corymboso-paniculato aphyllo cinereo-lanuginoso, foliis alternis amplexicaulibus ovatis obtusis minute calloso-denticulatis supra glaberrimis subtus tomentosis penniveniis, capitulis corymbosis 30-floris discoideis, involucri campanulati squamis laxe imbricatis linearibus acuminatis dense villoso-lanuginosis.

HAB. Elevated grassy tracts in the Diamond District. July, 1840.

Suffrutex bipedalis. Folia coriacea, valde reticulata, venis subtus prominulis, 3½-6 poll. longa, 1½-3 poll. lata. Capitula 7½ lin longa. Corolla profunde 5-fida, glabra, laciniis revolutis. Antheræ caudatæ, caudibus laceratis. Achænium oblongum, erostre, dense villosum. Pappus uniserialis, setaceus, scaber.

4787. (bis) S. *vaginata;* suffruticosa, caule erecto basi simplici folioso apice dichotome corymboso-paniculato subaphyllo cinereo-tomentoso, foliis alternis brevi-petiolatis, petiolis vaginatis, ovato-oblongis obtusis basi cordatis minute calloso-denticulatis supra glaberrimis subtus tomentosis penniveniis, capitulis corymbosis 40-floris discoideis, involucri campanulati squamis laxe imbricatis linearibus acuminatis dense villoso-lanuginosis.

HAB. Serra de Piedade, Province of Minas Geraes. Sept. 1840.

Suffrutex 1½-pedalis. Folia 3½ poll. longa, 15 lin. lata, coriacea, reticulata. Capitula 6 lin. longa. Corolla glabra, profunde 5-fida, laciniis revolutis. Antheræ caudatæ, caudibus laceratis. Achænium oblongum, erostre, dense villosum. Pappus 1-serialis, setaceus, scaber.

This species has quite the habit of the former, but is well distinguished from it by its different leaves, smaller capitula, and more numerous florets.

4955. S. *angustifolia;* scapo subsimplici subaphyllo subtomentoso, foliis radicalibus longe petiolatis anguste spathulato-lanceolatis apice acutis calloso-apiculatis basi longe attenuatis calloso-marginatis integerrimis coriaceis reticulatis glaberrimis, capitulis terminalibus solitariis 40-floris, involucri hemisphærici squamis laxe imbricatis linearibus acuminatis extus piloso-tomentosis.

HAB. Elevated moist sandy campos in the Diamond District. July, 1840.

Herba perennis, pedalis et ultra. Folia 6 poll. longa, 6 lin. lata. Capitula basi bracteolata, 9 lin. longa. Corolla extus resinoso-punctata, profunde 5-fida, laciniis revolutis. Antheræ caudatæ, caudibus laceratis. Achænium lineari-oblongum, dense villosum. Pappus uniserialis, setaceus, scaber.

MOQUINIA, *DC.*

Sect. SPADONISMA, *DC.*

2442. M. *oligocephala;* foliis petiolatis ovato-oblongis aut oblongo-lanceolatis utrinque acutis apice mucronatis integerrimis supra glabris subtus tomento brevissimo pallide cinereo tectis, pedunculis axillaribus petiolo brevioribus subtricephalis, capitulis breviter pedicellatis 8-10-floris, involucri squamis 3-serialibus laxe imbricatis villosis, exterioribus ovatis acutis, intimis lanceolatis, achænio lineari-oblongo piloso, pappi serie ext. interiore vix dimidio breviore.

HAB. Serra de Araripe, at Brejo Grande, Province of Ceara, Feb., 1839.

Frutex ramosus, 6-pedalis. Folia membranacea, reticulata, supra viridia, 3-4 poll. longa, 12-17 lin. lata: petioli 6 lin. longi, semiteretes, supra canaliculati, tomentosi. Capitula 4½ lin. longa. Corolla glabra, profunde 5-fida, lobis revolutis. Antheræ caudatæ. Stigmata glabra, obtusa. Pappus sordidus.

2895. M. *flavescens;* foliis brevi-petiolatis ovato-ellipticis obtusis basi rotundatis vel subcordatis integerrimis supra glabris nitidis subtus ramulisque dense cinereo-tomentosis coriaceis, capitulis subpaniculatis ad apices ramulorum congestis subsessilibus 6-floris, involucri cylindrici squamis pluriserialibus imbricatis tomentosis, exterioribus ovatis obtusis intimis lanceolatis, achænio oblongo dense piloso, pappi serie ext. interiore paulo breviore.

Hab. Serra da Batalha, District of the Rio Preto, Province of Pernambuco. Oct. 1839.

Frutex ramosus, 5-6-pedalis. Folia 2-2½ poll. longa, 12-16 lin. lata: petioli 3 lin. longi. Capitula 6 lin. longa. Corolla glabra, profunde 5-fida, lobis revolutis. Antheræ longe caudatæ. Stigmata glabra, obtusa. Pappus stramineus.

1735 M. *Cratensis;* foliis petiolatis oblongo-lanceolatis utrinque obtusis vel apice acutis integerrimis supra glabris nitidis subtus ramulisque tomentosis coriaceis, pedunculis axillaribus folio brevioribus subtricephalis, capitulis sessilibus 5-7-floris, involucri cylindrici squamis multiserialibus imbricatis tomentosis, exterioribus ovatis obtusis, intimis lanceolatis, achænio oblongo piloso, pappi serie ext. interiore vix dimidio breviore.

Hab. Serra de Araripe, near Crato, Province of Ceara. Nov. 1838.

Frutex 2-4-pedalis. Folia 2-2½ poll. longa, 8-11 lin. lata: petioli 2½ lin. longi. Capitula 5 lin. longa. Corolla ignota. Pappus stramineus.

4809. M. *polycephala;* foliis petiolatis ovatis oblongisque apice acutis basi obtusis vel interdum acutiusculis subdenticulatis supra rufo-piloso-tomentosis demum glabratis subtus ramulisque lanuginoso-tomentosis, paniculis axillaribus terminalibusque, capitulis sessilibus vel pedicellatis 9-12-floris, involucri oblongi squamis multiserialibus laxe imbricatis villoso-tomentosis, exterioribus ovatis obtusis, intimis oblongo-lanceolatis, achænio oblongo dense piloso, pappi serie ext. interiore duplo breviore.

Hab. Serro do Frio, Diamond District. Aug. 1840.

Frutex 6-pedalis. Folia 3½-5 poll. longa, 15-28 lin. lata: petioli 4-5 lin. longi. Capitula 6 lin. longa. Corolla glabra, profunde 5-fida, laciniis revolutis. Antheræ caudatæ. Stigmata obtusa glabra. Pappus stramineus.

This may perhaps be the same as Bongard's M. *tomentosa*, but as I have only the brief diagnostic character quoted by Walpers to refer to, I cannot be certain of their identity.

4810. M. *congesta*; foliis petiolatis ovato-oblongis utrinque obtusis calloso-denticulatis coriaceis utrinque ramisque lanuginoso-tomentosis, paniculis axillaribus terminalibusque lanuginosis, capitulis ad apices ramulorum congestis sessilibus 10-12-floris, involucri oblongi squamis multiserialibus laxe imbricatis villoso-tomentosis, exterioribus ovatis obtusis, intimis lanceolatis acutis, achænio oblongo dense villoso, pappi serie ext. interiore duplo breviore.

Hab. Elevated bushy tracts in the Diamond District. July, 1840.

Frutex ramosus, 4-5-pedalis. Folia 3½-4½ poll. longa, 18-24 lin. lata: petioli 4 lin. longi. Capitula 4½ lin. longa. Corolla glabra, profunde 5-fida, lobis revolutis. Antheræ caudatæ. Stigmata obtusa, glabra. Pappus stramineus.

4808. M. *desertorum*; foliis petiolatis ovato-oblongis oblongisque acutis acuminatisve apice mucronatis basi obtusis distanter mucronato-denticulatis supra pubescentibus subtus ramulisque cinereo-tomentosis, capitulis subracemoso-paniculatis plerumque pedicellatis 12-floris, involucri oblongi squamis multiserialibus laxe imbricatis villosis, exterioribus ovatis obtusis, intimis lanceolatis, achænio oblongo piloso, pappi serie ext. interiore paulo breviore.

Hab. In the Sertao, between the Rio de San Francisco and Formigas, Province of Minas Geraes. July, 1840.

Frutex ramosus, 6-8-pedalis. Folia 4-5 poll. longa, 1½-2½ poll. lata. Capitula 6 lin. longa. Corolla glabra, profunde 5-fida, lobis revolutis. Antheræ caudatæ. Pappus stramineus.

NASSAUVIACEÆ, *Less.*

JUNGIA, *Linn.*

4263. J. (Martrasia) *affinis;* foliis ex stipulatis supra sparse piloso-pubescentibus subtus petiolis ramisque puberulis, lobis crenatis obtusis, capitulis pedunculatis ex axillis folii imperfecti linearis ortis in paniculam divaricatam polycephalam ramosissimam dispositis, involucri squamis interioribus acutis.

HAB. Woods between Arrayas and San Domingos, Province of Goyaz. May, 1840.

Herba perennis, 4-6-pedalis. Corolla alba.

This plant agrees exactly in habit with *Jungia floribunda*, Less., (my n. 5795 from the Organ Mountains) and is, indeed, only distinguished from it by the want of stipules to the leaves, and the less acuminated inner scales of the involucrum.

TRIXIS, *R. Br.*

Sect. PRIONANTHEÆ, *DC.*

3870 et 4264. T. *Sprengeliana;* caule fruticoso scandente, ramis hirtis diffusis, foliis petiolatis oblongo-lanceolatis acuminatis basi acutis vix denticulatis supra piloso-hirtis subtus albo-tomentosis, petiolis alatis basi in auriculas parvas dilatatis, panicula foliosa hirta dichotomo-divaricata, capitulis pedicellatis circiter 10-floris, involucri squamis biseriatis piloso-hirtis, exterioribus linearibus longe acuminatis, achæniis rostratis puberulis.

HAB. Bushy places, near Villa de Arrayas (3870), and near San Pedro (4264), Province of Goyaz. April and May, 1840.

Frutex scandens. Folia 3-5 poll. longa, 1-2 poll. lata. Capitula 7 lin. longa. Receptaculum breve, piloso-fimbrilliferum. Corolla lutea. Pappus stramineus.

Near T. *divaricata*, Spreng., but at once distinguished by its hairiness and scarcely denticulate leaves.

3871. T. *calcarea;* caule fruticoso ramoso, ramis tomentosis demum glabratis, foliis brevi-petiolatis oblongo-lanceolatis acuminatis basi acutis minute spinuloso-denticulatis supra villosiusculis subtus sericeo-villoso-tomentosis, panicula foliosa tomentosa divaricata, capitulis pedicellatis circiter 10-floris, involucri squamis biseriatis pilosis resinoso-punctatis ciliatis, exterioribus linearibus parvis, intimis linearibus acuminatis, achæniis puberulis erostratis.

Hab. Open places on limestone mountains, near the Villa de Arrayas, Province of Goyaz. April 1840.

Frutex 3-4-pedalis. Folia 4-5½ poll. longa, 15-18 lin. lata. Capitula 6-lin. longa. Receptaculum dense piloso-fimbrilliferum. Corolla lutea. Pappus sordide albidus.

4266 et 4959. T. *ophiorhiza;* suffruticosa, caule erecto subsimplici hirsutissimo undique folioso, foliis sessilibus longe oblongo-lanceolatis acuminatis basi attenuatis mucronato-denticulatis utrinque fulvo-hirsuto-villosis, pedunculis axillaribus foliosis subpaniculatis hirsutis folio brevioribus, capitulis sessilibus 25-floris, involucri squamis biseriatis puberulis, exterioribus linearibus acuminatis sub-foliaceis, intimis brevioribus acutis ciliatis, achæniis longe rostratis puberulis.

Hab. Between Capella da Passe and San Pedro, Province of Goyaz (4266), and between the Rio de San Francisco and Formigas, Province of Minas Geraes (4959.) May and July 1840.

Suffrutex 4-6-pedalis. Folia 6-9 poll. longa, 15-18 lin. lata. Capitula 9 lin. longa. Receptaculum dense piloso-fimbrilliferum. Corolla lutea. Pappus albus.

This very distinct species of *Trixis* has a thick woody root, which has a disagreeable musty smell, and is used by the inhabitants of the districts in which it grows against snake bites, under the name of "Raiz da Cobra."

4964. T. *odoratissima;* fruticosa subscandens, ramis pubescentibus, foliis oblongo-lanceolatis acuminatis basi acutis denticulatis supra glabriusculis subtus cinereo-tomentosis, paniculis ad apices ramulorum confertis, capitulis brevipedicellatis 10-12-floris, involucri squamis biseriatis puberulis, intimis oblongis acuminatis, exterioribus bracteiformibus parvis, achæniis teretibus puberulis.

Hab. Between the Rio de San Francesco and Formigas, Province of Minas Geraes. July, 1840.

Frutex subscandens, ramosus. Folia 4 poll. longa, 12-18 lin. lata. Capitula 6 lin. longa. Receptaculum piloso-fimbrilliferum. Corolla alba, lobis ad apicem pilosis. Pappus stramineus.

Near T. *divaricata*, Spreng., from which it differs in the leaves being petiolate, the inflorescence more compact, and in the different involucral scales.

4957. T. *spicata*; caule herbaceo folioso late alato villoso ramoso, ramis elongatis, foliis ellipticis obtusis basi decurrentibus calloso-denticulatis supra glabriusculis scabridis subtus fulvo-villoso-tomentosis, floralibus oblongis parvis, capitulis secus ramos spicatis in axillis foliorum sessilibus sæpius glomeratis 5-floris, involucri subtriserialis squamis dense adpresse villosis oblongis acutis erectis, exterioribus bracteiformibus, achæniis puberulis.

Hab. Grassy campos near the Rio Claro, Province of Minas Geraes.

Herba perennis, 2-3-pedalis. Folia 2-4 poll. longa, 12-20 lin. lata. Capitula 7 lin. longa. Receptaculum piloso-fimbrilliferum. Corolla glabra, lutea. Pappus albidus.

4958 (bis.) T. *picroides*; caule erecto tereti striato pubescente basi simplici apice corymboso-paniculato, foliis radicalibus lineari-oblongis obtusis mucronatis basi attenuatis glabris calloso-denticulatis, petiolis dense sericeo-villoso-lanuginosis, caulinis acutis sessilibus longe angusteque decurrentibus, supremis vix decurrentibus, involucri squamis biserialibus linearibus acuminatis extus piloso-pubescentibus, achæniis obscure 5-costatis pilosis.

Hab. Serra de Curral del Rey, Province of Minas Geraes. Sept. 1840.

Herba perennis, 2-2½-pedalis. Folia radicalia 4-5 poll. longa, 9 lin. lata. Capitulum multiflorum, laxum, 10½ lin. longum. Receptaculum piloso-fimbrilliferum. Achænia 4½ lin. longa, erostrata. Pappus rufescens.

The following is a list of those species of *Labiatifloræ* in my Brazilian Collections, which have already been described by other authors.

4947. Mutisia *campanulata*, Less.
4968. ,, *speciosa*, Hook.
4183, 4805, 4806, 4807. Moquinia *cinerea*, DC.
4804. ,, *racemosa*, DC.
5507. ,, *polymorpha*, DC. var. β. *elæagnifolia*, Less.
3302, 4953, 4954. Leria *integrifolia*, Cass.
3301. ,, *nutans*, DC.
5795. Jungia *floribunda*, Less.
4963. Trixis *flexuosa*, Spreng.
1748. ,, *divaricata*, Spreng.
2654, 4960, 4961. ,, *Vauthieri*, DC.
4960. ,, *glutinosa*, Don.
4965. ,, ,, ,, var. β. *alata*, Gardn.
4958. ,, *verbasciformis*, Less.
5796. ,, *pinnatifida*, Less.

Kandy, Ceylon, May 5, 1847.

(*To be continued.*)

Botanical Characters of a new plant, (ISONANDRA GUTTA,) *yielding the* GUTTA PERCHA *of Commerce; by* W. J. H.

With a Plate, TAB. XVII.

At page 33 of the present volume is some account of the uses to which the gum yielded by the *Gutta Percha* plant has been applied; and we trust ere long to offer further particulars on that subject.* Our design now is to give the plant itself a station and a name; for *Gutta Percha,* like many other valuable vegetable products that could be mentioned is afforded by a tree hitherto unknown to naturalists. At the time the former paper was written we had, as there stated, only seen immature fruit, from which and the habit of the plant we were disposed to refer it, though not without a mark of doubt to "*Bassia?*" We wrote, however, to Dr. Oxley at Singapore, a gentleman ardently devoted to Natural History pursuits, for some flowering specimens; and by return of post he, in the most obliging manner, and for which we here tender him our hearty thanks, sent well preserved specimens, protected by a thin box, of which the top and bottom were made of sheets of the gum itself (now deposited in the Museum of the Royal Gardens of Kew). These flowering specimens have given us a more accurate knowledge of the structure of the inflorescence, and we feel little hesitation in referring this plant to Dr. Wight's new Genus of *Sapotaceæ*, which he has called *Isonandra*, and of which he has published two species (both in our herbarium) natives of the Madras Peninsula; o which De Candolle has added the *Sideroxylon Wightianum*, Wall. Cat. n. 4154. (non Hook.), and the *S. Perrottetiana* from the Nielgherries. Our plant quite accords in habit with *Isonandra*, and seems to differ only in the number of divisions and parts of the flower: *tetramerous* in Dr. Wight's species, *hexamerous* in our plant. We propose to call the Gutta Percha Plant

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* Messrs. Wilkinson and Jewksbury, 138, Leadenhall Street, have employed it, among other purposes, most successfully for casts of coins and medals.

ISONANDRA GUTTA;

Foliis longe petiolatis obovato-oblongis coriaceis integerrimis acuminulatis subtus aureo-nitentibus parallelo-venosis basi attenuatis, floribus axillaribus fasciculatis, pedunculis unifloris, calycis lobis imbricatis obtusis, corollæ subrotatæ lobis 6 ovatis patentibus, staminibus 12.

HAB. Mountains of Singapore, *Mr. Thomas Lobb*, (n. 290), *Dr. Oxley*.—The same species is said to be found in Borneo (on the authority of *James Brooke, Esq.*,) and in other Malay islands.

Arbor 40-pedalis, lactiflua, ramis junioribus subrufo-pubes-

centibus, teretibus. Folia alterna, subcoriacea, obovata, integerrima, brevi-acuminata, basi in petiolum longum gracilem attenuata, pennivenia (venis arctis, parallelis, horizontali-patentibus), supra viridia, subtus aureo-nitentia. Flores axillares, fasciculati, subnutantes, pedunculati. Pedunculi perbreves, uniflori. Calyx subovato-campanulatus, profunde 6-fidus, lobis biserialibus ovatis, obtusis, subaureo-nitentibus. Corolla subrotata; tubo brevi vix calycem superante; limbo 6-partito, lobis ovatis seu ellipticis, obtusis, patentibus. Stamina 12 ad faucem corollæ inserta, uniserialia. Filamenta æqualia, filiformia, lobis corollæ longiora. Antheræ ovatæ, acutæ, extrorsæ. Ovarium globosum, subpubescens, 6-loculare, loculis omnibus uniovulatis (?): stylus longitudine staminum filiformis. Stigma obtusum. Fructus calyce persistente suffultus; bacca dura, ovato-subglobosa, 6-locularis, loculis 4 abortientibus obsoletis, 2 fertilibus monospermis. Semina, vix matura, ad angulum interiorem loculi inserta.

Fig. 1. Flower, scarcely expanded; *f.* 2. ditto, with the corolla expanded; *f.* 3. pistil; *f.* 4. transverse, *f.* 5. vertical section of the ovary; *f.* 6. anther; *f.* 7. scarcely mature fruit, *nat. size*; *f.* 8. transverse section of ditto,—all but *f.* 7. *magnified.*

BOTANICAL INFORMATION.

Illustrations of SOUTH AMERICAN PLANTS; *by* JOHN MIERS, ESQ., F.L.S., &c. 4to. Baillière.

Many pages of this Journal (Vols. 4 and 5) are occupied with the valuable "Contributions to South American Botany" by Mr. Miers, chiefly relating to the Natural Order *Solaneæ*;—they have been followed up by the same author in a separate publication, under the above title, in *illustration* of several of the new or little understood plants already noticed in the

pages of the Journal. The plates are of a very superior order, notwithstanding that the Author modestly claims "much indulgence for the many imperfections attending his first attempt at any work of the kind." This alludes, indeed, to the lithographs, which are executed by himself. Of Mr. Miers' skill as a designer of plants, we have ample proof in his beautiful figures of certain *Burmanniaceæ* and *Irideæ* in the Transactions of the Linnæan Society; and for many years, Mr. Miers was assiduously employed in South America making botanical drawings, and very full analyses of numerous rare plants, which his extensive travels and observant eye enabled him to detect: not a few of these, and others, done with equal skill from Herbarium specimens, constitute the figures of the present "Illustrations."

The two numbers now before us contain; PART I. Tab. 1. *Salpichroa* (Perizoma) *rhomboidea.* Tab. 2. *Dunalia lycioides.* Tab. 3. *Acnistus cauliflorus.* Tab. 4. *Himeranthus runcinatus* and *H. tridentatus.* Tab. 5. *Himeranthus erosus,* and *Jabarosa integrifolia.* Tab. 6. *Dorystigma caulescens,* and *D. squarrosum.* Tab. 7. *Trechonetes laciniata.* Tab. 8. *Pionandra* (Ceratostemon) *floribunda.*—Part. II. Tab. 9. *Pionandra* (Euthystemon) *capsicoides.* Tab. 10. *Sorema paradoxa.* Tab. 11. *Alibrexia rupicola.* Tab. 12. *Dolia verticillata.* Tab. 13. *Grabowskia obtusa.* Tab. 14. *Metternichia Princeps.* Tab. 15. *Sessea stipulata.* Tab. 16. *Cestrum Organense.*—Every figure is accompanied by ample and most accurate dissections; and the whole is accompanied by a reprint, with a few alterations, of a portion of the text given in this Journal, (which will be continued here at different intervals), together with full descriptions of the plates. This will be a standard work on South American Botany, and ought to be placed on the shelves of every working botanist.

PRITZEL; *Thesaurus literaturæ Botanicæ omnium gentium inde a rerum botanicarum initiis ad nostra usque tempora, quindecim millia opera recensens.*—Brockhaus, Leipsic; Williams & Norgate, 4to. London, Fasc. I. A.—Endlicher.

A valuable work to the Botanist, if carried through as it is begun in this, the first, Fasciculus, where, so far as we have had occasion to consult it, it is executed with much care and accuracy. We were surprized to find no name of *Arnott* in the catalogue, till we recollected that, on the continent, that gentleman goes under the title of *Walker-Arnott.* "Il y a six ans," says Mr. Pritzel, in his Avant-Propos, "j'avais un entretien avec feu M. Dierbach, à la suite duquel je me décidai à consacrer mon loisir à la publication d'un grand ouvrage bibliographique. En voyant que l'on s'accoutumait à négliger le point de vue historique en traitant des questions scientifiques, et en me rendant compte qu'il devait résulter souvent une grande perte de temps pour les savants de ce qu'il devenait de plus en plus difficile de connaître l'immense quantité des ouvrages sur la botanique, je pris la résolution de faire cesser ce triste état de choses. Pour atteindre ce but, je commençai par revoir et comparer entre eux avec le plus grand soin tous les ouvrages de bibliographie botanique qui avaient déjà paru. Avant tout, je m'attachai à vérifier par autopsie, l'exactitude de tout ce qu'ils avançaient, et j'ose croire que jamais bibliographie n'a procédé avec une attention plus scrupuleuse. Dans tous les pays l'auteur se voyait accueilli de la manière la plus encourageante: les plus grandes bibliothèques de l'Allemagne et de la France, celles de Link, de Schlechtendal, de De Candolle, de Jussieu, de Delessert, de Barker-Webb, et de Camille Montagne, la Bibliothèque Palatine de Vienne, les bibliothèques privées, réunies, des Empereurs François et Ferdinand, et la magnifique Bibliothèque du Musée Botanique de Vienne, celle du Jardin des Plantes à Paris, les Bibliothèques Royales à Berlin, Paris, Bruxelles et Dresde, les Bibliothèques des Universités à Leipzig, Göttingen et Liège, et autres, ont été successivement visitées par lui, et en comparant partout son manuscrit avec les livres imprimés, plus de 40,000 volumes ont passé sous ses mains."

The arrangement is alphabetical. An asterisk (*) placed before the title of a book indicates that it has been examined by the Author in Germany; a cross (†) that he has met with the book in France or Geneva. The few books which have no signs have not been seen by the author; and generally a letter explains where he has seen the title. For the rare publications, the libraries in which they exist are mentioned. On the wrapper of the 2nd Fasciculus, which is promised to appear soon, the explanation of the signs and abbreviations will be given. The anonymous books and periodical publications and a table are to follow, when the alphabetical enumeration shall be terminated. There will be also a notice of printed Arabian books, promised by M. Wüsterfeld of Göttingen; then will come the scientific part, without the bibliographic details. The author has further the intention of afterwards publishing a second volume, containing a repertory of the literature of scientific journals, in order to render more useful a work, which, he hopes, will leave nothing to desire with respect to exactitude and to the value of the matter it will contain.

Such are the intentions of the Author, which we shall be glad to find fully carried through. The work will appear in eight fasciculi, each of ten sheets. The first number includes the notice of 2995 works. Since writing the above we have received the 2nd Fasciculus of this really valuable publication, extending to the article "Link;" and it does, so far as it goes, bear out the author in all that he has promised, and the wrapper, as announced, contains the "explicatio signarum præcipuarum."

Extensive Herbarium of French Plants on Sale.

We are requested, by a valued correspondent in France, to insert the following *annonce;* in the hope that it may meet the eye of some one disposed to become the possessor of the botanical collection, belonging to a person highly esteemed by those who know him and strongly recommended to our correspondent's notice by the late Admiral d'Urville.

"Un ancien Professeur, forcé par la perte de la vue, de se défaire de ses Collections, désire vendre à l'amiable; 1. Un Herbier de plus de 9,000 espèces, fruit de trente années d'herborisations: il contient presque la flore entière des environs de Paris, et même de la France: il serait très facile de le compléter par l'échange de ses doubles nombreux; les plantes classées d'après le *Botanicon-Gallicum*, portent presque toujours l'indication des lieux et la date de leur récolte. Ce serait une excellente acquisition pour une Académie départementale ou étrangère, ainsi que pour un Professeur ou un Botaniste éclairé qui voudrait publier une flore soit partielle, soit générale de la France. 2. Une collection de coquilles marines, fluviatiles, terrestres et fossiles, d'environ 1,200 espèces contenant presque toutes celles de la France. 3. Deux grandes boîtes d'insectes. 4. Des livres de sciences. Chez M. Delavaux, Rue du Four-Saint-Germain, No. 22, Paris."

Catalogue of MALAYAN PLANTS, *collected by Mr. Thos. Lobb, sets of which have been announced for sale by Mr. Heward, Young Street, Kensington,* (*see p.* 198 *of vol* 5); *by* M. J. E. PLANCHON.

(*Continued from Vol. V. p.* 226.)

The early numbers of this valuable collection were made by Mr Lobb in Java. The beauty and rarity of the specimens gave such satisfaction to the subscribers that Mr. Lobb has extended his researches: some of the present list are from Singapore (a very large collection having been lost by shipwreck); and we are now happy to say, that a further addition has arrived of extremely interesting and beautiful specimens from Moolmain, which are placed in the hands of Mr. Heward for numbering and distribution. This set contains, among others of great rarity and novelty, the singular *Barclaya longifolia,* Wall. (Linn. Trans. v. 15. p. 443, tab. 18) with flowers resembling in structure those of *Euryale,* and leaves in shape like those of *Scolopendrium vulgare;* a plant so scarce, that Dr. Wallich is not aware that a good specimen is to be found in any herbarium.

It will be observed, that the subjoined list is hastily drawn up, mainly with a view of determining the family, and as much as possible the genus, of the individuals: the specific identity is a work of too much labour to be quickly accomplished, and the Editor is sure that the subscribers to these collections will feel thankful to M. Planchon for this aid to the determination of the species.—Ed.

Java Plants *continued.*

226. Clematis Javana ? *DC.*
227. Sterculia longifolia,* *Vent.*
228. Flacourtia cataphracta, *Blume.* an *Roxb. ?*
229. Antheischima excelsa, *Korth.*
230. Geniostoma hœmospermum, *Steud.*
231. Asclepiadea.
232. Hypericum triflorum, *Blume.*—Conf. H. Leschenaultii, *Choisy.*
233. Sanicula Javanica, *Blume.*—Conf. Sanicula elata, *Hamilt.*
234. Rubus pulcherrimus, *Hook. Icon. tab.* 729-730.
235. Wendlandia glabrata, *DC.*
236. Valeriana Javanica ? *Blume.*
237. Caprifolium Loureiri, *Blume.*
238. Weinmannia Blumei, *Planch.*—*Arnoldia pinnata,* Blume.

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* L'espèce No. 15 de cette liste que je crois avoir justement déterminée *Sterc. subpeltata,* Blume, est, d'après un échantillon authentique, le *Sterculia grandifolia,* Bl.

239. Gynura, Gyn. tomentosæ affinis.
240. Microglossa volubilis, *DC.*
241. Gynura.
242. Gentiana quadrifaria, *Blume.*
243. Buddleia acuminatissima, *Blume.—B. Asiatica?* Lour.
244. Torenia Asiatica, *Blume.—Torenia scabra,* Hassk. sed non Rob. Br.! a stirpe Ceylanica forsan differt.
245. Antidesma.
246. Ficus.—Conf. *F. rostrata,* Blume.
247. Eriosolæna montana, *Blume.*
248. Urtica angustata? *Blume.*
249. Gramen.
250. Arisæma laminatum, *Blume.*
251—257. Orchideæ.
258. Asplenium,* (n. 56. Cuming.)
259. Aspidium angulatum?
260. Sitolobium Moluccanum, *J. Sm.*
261. Polypodium ornatum, *Wall.*
262. Aspidium (Polystichum) vestitum, *Bl.*
263. Goniophlebium.
264. Adiantum pulchellum, *Bl.* (ex descr.
265. Selliguea flavescens, *J. Sm.*
266. Nephrodii, n. sp.?
266 (*bis.*) Lomaria vulcanica, *Bl.* (ex descr.)
267. Prosaptia contigua, *Presl.*
268. Polypodium.
269. Polypodium subfalcatum, *Bl.*
270. Polypodium obliquatum, *Bl.*
271. Grammitis hirta, *Bl.*
272. Asplenium, (*sect.* Athyrium.)
272 (*bis.*) Diacalpe aspidioides, *Bl.*
273. Lastrea, sp. *near* L. propinqua, *J. Sm.*
274. Lomaria elongata, *Bl.* (ex descr.)
275. Leucostegiæ, n. sp. *J. Sm.*
276. Nephrodium.

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* The Ferns, Nos. 258—276, are determined by Mr. J. Smith, whose nomenclature is here adopted.

PLANTS OF SINGAPORE.

277. Urophyllum.
278. Pentaphragma begoniæfolium, *Wall.*
279. Urophyllum. . . . .
280. Licuala. . . . .
281. Durio Malaccensis, *Pl. in herb. Hook.*
282. Conocephalus, sp.
283. Urticea. . . . . Urticæ pedunculatæ, *Wall.* congener.
284. Timonius. . . . T. Rumphii, *DC.* proximus.
285. Eugenia (Jambosa) ramosissima, *Wall.*
286. Lerchea? sp.
287. Uvaria lanuginosa, *Wall.*
288. Rubiacea . . . . Jackiæ affinis.
289. . . . . . genus nov. *Thotteæ* affine, Lobbia dependens, *Planch.* hocce opere, supra, p. 145. Tab. III.
290. Sapotaceæ, gen. novum.—Isonandra Gutta, *Hook.* in hoc vol. p. 423. Tab. XVI. (Gutta Percha tree.)
291. Gardenia tubifera, *Wall.*
292. Buttneria Jackiana, *Wall.*
293. Loranthus pentandrus, *L.* — *L. farinosus,* Wall. Cat. n. 514.
294. Solanum.
295. Solanum.
296. Memecylon, sp.
297. Rottlera barbata, *Wall.*
298. Verbenacea.
299. Monocera petiolata, *W. Jack.*
300. Salomonia oblongifolia, *DC.*
301. Delima hebecarpa, *DC.*
302. Nepenthes.
303. Ficus. . . .
304. Euphorbiaceæ? specim. masc.
305. Anonacea.
306. Chirica, sp.
307. Sapotacea. . . .
308. Ixionanthes dodecandra, *Griffith.*
309. Boerhaavia.
310. Millettia? sp.

311. Didymocarpus crinita, *Jack.*
312. Rubiacea. . . .
313. Ardisia, (sect. *Marantoides*, DC. *Labisiæ* sp. Lindl.) *A. pumilæ* proxima.
314. Meniscium salicifolium, *Wall. Cat.*
315. Knema glaucescens, *Jack.*
316. Ardisia odontophylla, *Wall.*
317. Tetracera Assa, *DC.*
318. Coffæa, C. tetrandræ, *Roxb.* proxima.
319. Sideroxylon attenuatum, *Alph. DC.*
320. Desmodium umbellatum, *DC.* vix *Jacq.*
321. Ficus. . . . .
322. Urophyllum villosum, *W. Jack.*
323. Getonia, sp.
324. Mæsa ramentacea, *Wall.*
325. Sonerila Moluccana, *Roxb.*
326. Wickstrœmia Indica, *Endl.*
327. Loranthus erythrostachys, *Wall. herb.*
328. Cerasus (*sect.* Laurocerasus.)
329. Wormia excelsa, *W. Jack.*
330. Herpestes Monnieri, *H. B. K.*
331. Uncaria.
332. Uncaria.
333. Asclepiadea. . . . .

(*To be continued.*)

Notes on PLANTS *of the* BRITISH FLORA.

Calamagrostis stricta, Nutt.

The Rev. G. E. Smith has again sent us specimens, and in a fresh state, of *Calamagrostis stricta*, from Oakmere, Cheshire. It is identical with the Forfarshire plant, found by the late Mr. G. Don; and, as we stated in the British Flora, ed. 5. p. 385, quite distinct from C. *Lapponica*, of which the only British station is in the County Antrim, Ireland, detected by Mr. D. Moore.

Phalaris utriculata, L.

This pretty grass (the *Alopecurus utriculatus* of Persoon and Kunth) has been recently detected by James Hussey, Esq., in a field near Swanage, Dorset, extremely abundant in one corner of that field. Mr. Hussey thinks it next to impossible it should have come by ballast, but that it is barely possible it may have been imported with foreign corn or agricultural seed of some description. It is a native of France and Germany; and it is not a little singular that Kunth, in his "Agrostographia," gives "Anglia" as one of its localities.

Allium sphærocephalum, L.

This rare plant, which had been only hitherto found wild in the Channel Islands, was discovered this summer by H. O. Stevens, Esq., of Bristol, on St. Vincent's Rocks, though in small quantity.

Simethis bicolor, Kth.

The old *Phalangium bicolor* (*Simethis*, of Kunth), as has been already mentioned in a recent number of the Gardeners' Chronicle,* has been detected apparently wild near Bournemouth by Miss Wilkins, to whom we are indebted for a specimen. It is too southern a plant to be expected to be a native in such a locality; yet, on the other hand, not being a corn plant, it is the less likely to be imported with seed. The writer in the Gardeners' Chronicle is disposed to attribute its introduction to ballast.

Trifolium strictum, L. in Cornwall.

The Rev. C. A. Johns, of the Grammar School, Helston, has recently had the good fortune to discover this rare trefoil, hitherto, in the British possessions, confined to Jersey, in Cornwall, in two stations, and abundant in each. He also speaks of *Tr. Molinerii*, Balb., as really distinct from *incarnatum*, and as truly wild in Cornwall. In reply to some queries on the subject, that gentleman has sent me the following remarks, which I am sure will be acceptable to every student of British plants.

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* Where the name of Watkins is a misprint for Wilkins.

"With regard to the question whether T. *strictum*, *Bocconi* and *Molinerii*, are aboriginal natives, I can see no more reason to doubt that they are so, than that T. *striatum*, *scabrum*, and *arvense*, are natives. They all grow together; so that in one of the stations I actually did cover growing specimens of all six with my hat. T. *strictum* and *Bocconi* could not have been introduced for agricultural purposes, being far inferior to many other species which grow freely in the neighbourhood: there is no garden for the cultivation of rare plants within many miles. The Lizard Head, near which they both grow, is at least two miles from any cove at which a vessel could effect a landing with safety; and that cove is visited only by colliers, which of course discharge no ballast. The cliffs in the vicinity of the station are very precipitous, and no ballast thrown overboard or washed from a wreck could be carried thither: though, formerly, smugglers kept up a continual communication with France and the Channel Isles, it would be absurd to suppose that they were in any way accessory to the introduction of two such *worthless weeds*, as they would think them. I have seen foreign plants growing on ballast-heaps near Plymouth, and should never think of mentioning them as fair claimants for admission into the British Flora; but in the present case I have no hesitation in saying that any botanist who would accompany me round the Lizard Cliffs must arrive at the conclusion, that they are either aboriginal natives, or have been sown very extensively on remote points of the coast by a dishonest botanist for the sake of gaining a mite of éclat: that is to say, T. *Bocconi*, by Borrer, and T. *strictum*, by your humble servant. By the same argument, T. *Molinerii* must have been sown by Mr. Hore and myself who found it together. All that I have said of the two first, applies equally to T. *Molinerii;* for though referred to T. *incarnatum*, it is entirely distinct from every specimen of that plant which I have seen in other places; while even the true T. *incarnatum* is unknown in the neighbourhood. The small farmers of the neighbourhood do not trouble themselves about anything but corn, hay, clover, potatoes, and turneps; corn and potatoes being almost the exclusive produce of the parish. T. *Molinerii* grows in large patches along the verge of the cliff, from Cadquith to Kynance, a distance of six miles. Now T. *incarnatum* has been so recently introduced, that its (so-called) variety cannot have *crept* all that distance from *one* field: it has not had time to do so: besides, between two of the stations there is an interval of more than two miles. It follows, that it must have escaped from several plots of cultivated ground. Now how comes it that at the Lizard, where no one knows anything about T. *incarnatum*, *that* plant in several instances escaped from cultivation and assumed a new form; whilst at the one thousand places where it has been cultivated for years no such eccentricity occurred? My opinion is, that the district in question is peculiarly favourable to the growth of the *Leguminosæ;* and that the three rare *Trifolia* have escaped notice because *visitors* are very rare, the coast very beautiful, so that their eyes are naturally attracted elsewhere; and it is very wearisome to travel over, so that many parts have not been explored at all. Under a headland, called the Bill, I found, ten years ago, *Asparagus* in flower. No one, I believe, has set eyes on it in that spot, until I went thither last week, though it grows there in beds some yards long. The *Leguminosæ* which I have found are *Ulex Europæus* and *U. nanus; Cytisus scoparius; Genista pilosa, tinctoria, Anglica; Ononis arvensis; Anthyllis vulneraria: Medicago lupulina, maculata: Trifolium pratense, medium, Molinerii, arvense, striatum, scabrum, Bocconi, subterraneum, strictum, repens, procumbens,* *filiforme : Lotus corniculatus, major, hispidus : Ervum hirsutum, tetraspermum ; Vicia cracca, sepium, lutea, sativa : Lathyrus pratensis ;*—in all thirty-four species ; and most of them in profusion."

C. A. JOHNS.

Tussack Grass, (Dactylis cæspitosa), Forst.

This remarkable grass of the Falkland Islands, the most productive perhaps, and the most luxuriant of all agricultural grasses, if sown or planted in a suitable locality, has, we rejoice to say, succeeded perfectly in the Island of Lewis, one of the Hebrides. It has flowered, ripened seed, and sown itself; and Mr. Matheson, the spirited and philanthropic possessor of that large island, has sent us leaves of it 5 feet long, nearly as long as any produced in its native country. The perennial tufts attain a very large size : hence the name given by our voyagers of Tussack Grass. See for an account of this grass, vol. 2, p. 280 and 298, TAB. 9 and 10, &c. of this Journal.

Notes of a Continental Tour in the years 1846-7*; extracted from letters addressed to the Editor by a botanical friend.*

(*Continued from p.* 54).

Geneva, June 16, 1847.

" Since we left Florence in the beginning of March, I have visited many Italian botanists, and botanical establishments; and, in general, there has appeared to me a considerable impulse given to the science in a progressive direction. Botany is not now restricted to the nice distinction of local species and forms, and to their distribution among the twenty-four Linnæan classes, as it had been for so long in Italy. There is a growing desire to form general herbaria, to arrange them as well as the botanical gardens upon the principle of Natural Orders, and, as a necessary consequence, to study general affinities, the relation of outward forms to anatomical structure and physiological distinctions, and to raise the standard of the science. I cannot but think that this change has been, in a great measure, the result of the success attending the zeal and activity of Parlatore in establishing the "*Central Italian Herbarium*," at Florence, aided, as he has been, by the liberality of the reigning Grand Duke.

From Florence, our first halt was at Pisa, where is one of the old Italian botanical gardens, still arranged according to the old Linnæan classes, it is true, but to which a large addition has just been made for the express purpose of adding a natural classification. The herbarium attached to the garden and belonging to the University, is chiefly that of the late Professor Gaetano Savi, and does not yet contain much besides Italian and garden plants. It is now under the direction of the present Professor Pietro Savi, son of Gaetano, and brother of Paul Savi, the Professor of Zoology, who is showing great zeal in the formation of the zoological museum, and has made beautiful preparations of the animals which have died at the menagerie. Under Professor Pietro Savi is an active young man, Dr. Tassi, assistant-director of the garden and herbarium: both are eager in the endeavour at least to increase and determine accurately the collection. It is kept with more than even the usual complication of precautions, which have practically little effect besides increasing the difficulty of consultation. Plants, loose in double sheets, are well done up in bundles, between boards, each bundle enclosed in a wooden box, and the boxes ranged on shelves. The library, though very inefficient for a working botanist, contains many of the most useful works for determining species.

At Naples, the botanical garden is under the direction of Professor Tenore, assisted by Dr. Gasparrini, who now lectures for him. Tenore's own herbarium is a general one, and is estimated, I believe, at some ten thousand species: he has also a very fair botanical library; although neither the one nor the other may be sufficient for a working botanist in the present day, nor is there at Naples any public botanical library to supply the deficiency. Tenore's collection of Neapolitan and Sicilian plants is of course very rich: the whole herbarium is in bundles, arranged under the Linnæan classes. Professor Gussone, who is now also resident at Naples, has a general herbarium, but chiefly of plants of the Mediterranean region, and especially of Neapolitan and Sicilian plants, very carefully labelled, constituting the chief materials of his very accurate works on the Sicilian Flora. M. Gussone has also a botanical library, formed with special reference to the Mediterranean Flora. Dr. Gasparrini, having turned his attention a good deal to questions of physiology and general affinities, bestowed much care on the determination and arrangement of his small herbarium according to the Natural Orders; but being disgusted, in a great measure, by the want of any available botanical library, and desiring to devote what leisure he has rather to questions of pure physiology, he wishes now, I believe, to dispose of his herbarium, which would form an excellent commencement for a young botanist.

At Palermo, the liberal invitations offered to the votaries of botany both by nature and art, have, owing to various causes, been but poorly responded to by the botanists themselves. The climate and soil are perhaps the very best I am acquainted with for a magnificent collection of living plants: a site, not perhaps the best that could have been selected, but still a very fair one, has been appropriated to the botanical garden: a building, architecturally handsome enough to raise the science in the opinion of the vulgar by showing the honour paid to it, has been erected as a lecture-room and museum; and funds have been appropriated to it,—small, it is true, but which might go a good way in that country; yet, neither the plants in the garden nor yet the herbarium are what one would have expected. The necessity of a natural arrangement is admitted, and its adoption resolved on, but not yet commenced. The herbarium is a general one; but the great bulk consists of Sicilian plants in fine and numerous specimens, neatly tied in bundles, and most largely housed in the great room devoted to it. Professor Tineo, the director, has been very active in the investigation of the flora of the island, and published several short papers describing the new forms he has found. But by far the best set of Sicilian plants in Palermo, for number and beauty of specimens, is that of M. Todaro, a young advocate who devotes his leisure hours to botany, and has published some carefully executed papers on Sicilian *Orchideæ*, and some other plants. The Professor of Zoology, Dr. Calcara, has also a small herbarium, chiefly collected during his zoological excursions.

The Professor of Botany, at the University of Catania, is a Benedictine monk, the Padre Tornabene, who has investigated well the botany of the neighbouring Mount Etna, and is forming a botanical garden and herbarium for the University. I had not time to go on to Syracuse, where I understand a medical man, M. Cassia, is zealous in the pursuit of botany.

Rome, since the death of Mauri, affords but very little in the way of botany. The accounts given me of the botanic garden were so very bad, that I would not waste time in finding it out; and I could not hear of a single botanist, save a lady, the Countess Fiorini-Mazzanti, who has indeed distinguished herself by a very careful search of the Roman ruins, from whence she has collected and determined a herbarium of about three hundred species, and by her investigation of the mosses of the country, which she has published in a Latin pamphlet under the title of "Bryologia Romana."

Lucca boasts of a botanical garden and professor of botany; but their fame did not reach me till I had left the place far behind me. Genoa has made considerable progress since I last saw it twelve years since. M. de Notaris, professor of botany, and director of the garden, author of a obtuse umbonate; epidermis below the umbo brownish cracked; margin white, smooth, deeply striate.

Stem above 3 inches high, nearly ¼ thick sunk into the substance of the pileus, equal, smooth, nearly white, stuffed, rooting below; root sometimes forked. Ring narrow spreading.

Gills broad, white, ventricose, terminating at some distance from the true apex of the stem.

This is distinguished from *Agaricus continuus,* by its cracked cuticle, even, and not crenate margin, and broad ventricose gills.

There is another new species (n. 78) from Peradenia, growing on old wood; but it is impossible to characterise it from a single dried specimen which shows nothing of the gills, as is also the case with the drawing. It is far smaller than *Ag. continuus,* has the margin of the pileus even, and a narrow reflexed ring with an equal stem.

Pileus campanulate ¾ of an inch broad, white, umbonate. Stem 1 inch high, 1½ line thick.

*A. *cristatus,* Bolt. Gardner, n. 49.

On the ground. Peradenia.

Of this I have seen no specimen.

*A. *cæpæstipes,* Sow. Gardner, n. 47.

On the ground. Peradenia.

No specimen was preserved of this species.

143. A. (Lepiota) *aspratus,* n. sp.; pileo hemispherico demum depresso pallido verrucis e floccis fasciculatis exasperato; stipite subæquali floccoso-squamuloso; lamellis albis adnexis. Gardner, n. 50.

On the ground in shady places. Hautane Range, Ceylon. June, 1844.

Pileus 1-1½ inch broad, hemispherical at length, expanded and depressed, pale yellow, rough with acute warts consisting of fascicles of flocci.

Stem 1½ inch high, 2 lines thick, near equal flexuous clothed with floccose scales, which are frequently confluent.

Ring indistinct.

Gills moderately broad, white, adnexed.

A most exquisite species allied to *Agaricus granulosus*; but at once distinguished by the warts, which are in miniature exactly those of some *Lycoperdons*.

144. A. (Lepiota) *albuminosus*, n. sp.; e campanulato obtusus nodulosus velo glutinoso obducto, margine estriato appendiculato, stipite sursum attenuato e velo diffracto transversim squamoso radicante; lamellis albis. (TAB. XX. *f.* 3.) Gardner, n. 51.

On the ground. Peradenia, Ceylon. June, 1844.

Pileus campanulate obtuse 1½ inch broad, white, noduloso squamose clothed with a glutinous veil, portions of which remain attached to the margin, while others form transverse scales on the stem exactly as in *Cortinaria collinita*.

Stem 3 inches high, 2 lines thick in the centre, attenuated upwards, almost bulbous below.

Gills white.

Nearly allied to *Ag. illinitus*, Fr., and differing principally in the scaly stem.

TAB. XX. *fig.* 3. A. *albuminosus*, *nat. size.*

145. A. (Armillaria) *dasypeplus*, n. sp.; cæspitosus, pileo e convexo expanso demum depresso sinuatoque tomentoso squamuloso fulvo; stipite subæquali annuloque fugaci tomentoso rufo; lamellis incarnatis purpurascentibus postice sinuatis dente affixis. Gardner, n. 63.

On old wood. Hautane, Ceylon.

Cæspitose. Pilei 1½-2 inches across, at first convex then expanded, at length depressed and sinuated, clothed with short dense down here and there raised into little scales, tawny.

Stems nearly equal, 1 inch high, 2-3 lines thick, redder than the pileus, densely but shortly tomentose, as is also the fugacious veil.

Gills flesh coloured, then purplish, of a rich brown when dry, sinuated behind, attached by a short tooth.

Closely allied to *Agaricus melleus*, but very distinct in the

Launceston, V.D.L., January 21, 1847.

"When I last did myself the pleasure of writing to you, I was about to start for Lake St. Clair, and to ascend 'Mount Olympus.'—Accordingly, Mr. John Jamieson, who was with you at Marlborough, and myself, drove 'tandem' to Hobart Town in a day and a half from Pinquite. I devoted an hour to Brown's River, for the purpose of gathering *Algæ;* whilst Jamieson had some business to transact in Hobart Town; and I was fortunate enough to detect some new species:—one, especially curious, a green one, transparent, like strings of green glass beads (*Conferva clavata*); but whether, when you see them, you will think they are worth the expense of hiring a cab for five hours, at four shillings per hour, in order to reach Brown's River, is very questionable. I gathered a specimen of *Fucus potatorum* on the rocks; but I was compelled to limit my collection of the larger sorts, as I had to send the whole over per coach to Mrs. Gunn to dry, which, having done, we drove up to Glen Leith. By the by, I found on the rocks at Brown's River, animals very much like living *Encrinites!* except that the upper portion did not expand.

I may pass over my ride from Glen Leith to Marlborough, for I saw no novelties. On the 4th of January I started from Marlborough for Lake St. Clair. On the way I collected a few specimens of a *Prasophyllum*, and many of *Botrychium Lunaria!* which was in vast abundance, but rather past its season. I had not met with it in the low country; yet at that elevation it occurs in some places at every yard. Having arrived at the Lake about half-past two, I immediately commenced melting some pitch to pay the seams of the boat, which was very leaky, the bottom having been injudiciously exposed to the sun and wind. A very short time sufficed to enable us to make the boat water-tight, launch her, get all my various goods on board and pull off. I may mention that I sent two men with my pack-horses over the mountains from Launceston, (by the same route as I had followed in 1845), to meet me at Marlborough, and to carry my portable tent, Opossum-skin rugs, paper, &c. &c. On the evening of the 4th we encamped close to the lake, and at the foot of "Mount Olympus." All the west side of the lake is a very steep bank, densely covered by a forest of *Fagus Cunninghami, Carpodontus lucida, Weinmannia Australis, Phyllocladus aspleniifolia,* and a few *Eucalypti* interspersed, the *Fagus* preponderating. The trees continue to the very water's edge, and overhang the lake; so that it was no easy matter to find a clear space, even 8 feet square; but at last a sandy beach was discovered, which offered us a landing-place.

January 5, 1847.—Temperature of the water of Lake St. Clair, at 6 A.M., indicated by a thermometer left in all night, was as high as 58°. My party started to ascend Mount Olympus about half-past seven. We carried a small tent, a couple of Opossum rugs, and provisions, for two days, for Mr. Jamieson, Mr. B. Brooks (his cousin), my two men and myself. We had not ascended many hundred feet when we found ourselves opposed by a precipitous sandstone cliff; down which innumerable streams of water poured in small cascades. It took us some time to find a place up which we could climb; and we were then met by two other successive sandstone precipices, which we eventually surmounted. Under one of these I found a new fern, and saw *Gleichenia tenera*, Br., abundant. Over the sandstone we came to basaltic rocks, which continued to the top, all columnar basalt: a great number of the columns, however, have fallen down. We passed through a thicket of dwarf *Fagus Cunninghami,* and other alpine shrubs, and then arrived at a bare heap of rocks wildly thrown together, with huge openings and chasms among them. Almost at the top of these, and at the base of the perpendicular basaltic cliffs, constituting the summit of Olympus, I found a new *Fagus!** it formed dense, almost impenetrable thickets from 4 to 6 feet high. The leaves somewhat resemble *Fagus fusca* of New Zealand. There were large patches of it, to the exclusion of all other shrubs. I gathered empty seed-vessels, but no male or female flowers. Associated with it in one spot grew *Athrotaxis selaginoides*, which is one of the rarest species. A few hundred feet took us to the summit, where a large patch of snow greeted our eyes; but we could obtain no water. The whole of the rocks and stones were covered by prostrate plants, principally *Podocarpus alpina*, *Microcachrys tetragona?* and some few other plants which I had before seen. I found, however, one entirely new *Cruciferous* plant of very peculiar appearance and habit, (my n. 326*), an *Umbellifera* which I do not think is a *Caldasia*: it had precisely the smell of *Carrots*, a circumstance observed by me in 1833, when I first discovered it. I also saw my *Gaultheria* (516), called by Backhouse *G. antipoda*, but neither in flower nor fruit. *Grammitis* (my n. 1546) is a distinct species, and not a var. of *G. australis*.† *Epilobium*‡ (1066) was abundant. A dense mass of clouds, with rain, came on: it was bitterly cold; and before I had spent a fourth part of the time I intended in examining this very high point, which must be at least 5000 to 5500 feet above the sea, I was compelled, by prudence, to commence my descent. As previously observed, the rocks were entirely columnar basalt, certain parts with all the columns overturned, and the outer edges of those cliffs, where the columns were erect, have deep chasms between every prism, which it was unsafe to leap over; as a fall would have been certain death. It was an extraordinary mountain and a geological puzzle, from the circumstance of all this basalt seeming to overlay the sandstone rock in horizontal strata of vast thickness. At least, I can hardly believe that the sandstone is of more recent formation, from the fact that all the water from the top of the mountain, and the ridge connected with it, runs out where the sandstone and basalt unite, forming innumerable rills and cascades over the sandstone cliffs. Having used the precaution of marking all the trees in going up, we made our way down more rapidly and safely. *Richea pandanifolia* is abundant, from the edge of the lake at an elevation of from 1500 to 2000 feet up: in some cases the old leaves and flowers sheathed the trunk for 12 to 15 feet! the growth, I should presume, of at least fifty years! The ends were all worn off, and the whole formed so complete a covering to the stems, in that windy region—(it was the lee side of the mountain we ascended), that neither wind nor rain could have any effect upon them. On arriving at the sandstone formation we found water running from under the basaltic rocks. Its temperature, by careful trial, was 39^0 of Fahr. I omit our adventures until we again reached our boat, all safe.

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* I propose naming this most interesting addition to the Tasmanian Flora F. *Gunnii*, after its indefatigable discoverer.—J. D. H.

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* *Oreomyrrhis* (Caldasia, *Lag.*) *sessiliflora*, H. f.

† G. *depressa*, H. f. *vid.* p. 267.

‡ E. *glabellum*, Font. ? *var.*

January 6th.—Went to the north end of the lake. Along the whole western shore, *Athrotaxis cupressoides* and *Microcachrys tetragona* skirted the edge of the lake; but I could not find a single plant 5 yards inland, except of the latter, in a prostrate form, (if it be the same) at the very top of the mountains. The Narcissus River offered nothing new; and the vegetation of the eastern shore was composed of *Eucalyptus* only, as a tree, and shrubs of *Leptospermum*, *Coprosma nitida*, *Banksia*, dwarf *Casuarina stricta?* and other rather common plants; but the two sides of the lake were as different as possible. No *Fagus*, *Carpodontus*, *Weinmannia*, *Cenarrhenes*, *Coniferæ*, *Richea*, or the numerous other plants which rendered the western side so interesting, to which I therefore returned.

January 7th.—We rowed along the western shore to the Cuvier River, and thence to the southern end.

January 8th.—Again got to the source of the Derwent, where it discharges itself from the lake. I found here a curious var. of the common *Stylidium*, being an approach to *S. umbellatum*, of Labillardiere, from the lengthening of the peduncles; and the flowers were more regular. I picked up a dozen or two other things, but very little new, compared to what I expected; and there was no use loading myself with well-known plants. So that the new *Fagus*, cruciferous plant and fern must satisfy you as the result of the trip. I gathered some of the resin of the *Microcachrys* for you, and some more *woods*.

Lake St. Clair has no fish or living creatures inhabiting its waters; so far as I could detect. Thousands of *Ornithorynchi*, however, people the source of the Derwent. Ducks were scarce: we shot a specimen of the musk duck (*Malacorhynchus membranaceus*), and some black ducks."

R. GUNN.

BOISSIER: *Spanish Botany. From* Estepona *to* Gibraltar, *through* Ronda.

I was on the point of proceeding straight from Estepona to Gibraltar, along the sea-shore, previously to visiting the Serranio, where the country is cold, and vegetation backward, when I was informed that the fair at Ronda would commence on the 21st of May, and that I had not more than time enough to go there. Much had been told me about this fair, which is the great annual solemnity of all the inhabitants of Andalusia, residing within a circuit of 100 miles; and I felt curious to see its celebrated bull-fights, and to enjoy the animated spectacle which the town and its environs present at this season. Consequently I modified my first plan, and set off early next morning for Ronda, along with an inhabitant of the Serrania, who promised to guide me through the difficult and little known paths which cross the mountains. We pursued awhile the road which leads to Marbella, and then turned aside and followed the channel of a stream, among arid plains, and reached the valleys at the foot of the Sierra. The sun was rising, and it brought out, by its fine masses of light and shade, the forms of the Barbary Mountains behind us. "Alli està la Moreria," (*there lies the land of the Moors*:) so said my guide, while carelessly and scornfully pointing to that strange and little known region, which stirred all my feelings of curiosity and wonder. Nature was redolent of sweets in the cool morning hour: lovely *Oleanders* and fringe-petaled *Cistus* expanded their charming blossoms, one of the most elegant being the *Helianthemum atriplicifolium*, with long velvety panicles;

its flowers are so ephemeral, that the early passenger alone beholds them in perfection. Whole slopes were covered with bushes of *Sideritis arborescens,* mingling with the delicate blue-flowered *Campanula mollis.*[*] This path is only used by the *arrieros,* or carriers, who convey fish to Ronda and the Serrania: it generally pursues the ravines with which the hills are furrowed. At the height of 1500 feet we saw a spot where mines of lead are worked; but the journey before us was already too long to permit of our exploring them. Hereabouts we entered a zone of Firs, thickly sprinkled over a rocky and melancholy tract: the steepness of the way, compelling our poor beasts to stride across huge masses of stone, rendered our progress very slow. From time to time we noticed, fixed to a tree, or overshadowed by a cliff, the little wooden cross which commemorates tragic events, too common in Spain, and which adds desolation and mourning to the funereal character of the landscape. "Este camina està sembrado de muertes," (*this path is strewn with murders,*) said, in energetic tones, a woman whom I questioned respecting one of the most recent memorials. She told me that it was dedicated to the memory of a peasant from Estepona, who, returning from Ronda with a sum of money, was killed by his companion, who shot at him from behind, and then fled to Gibraltar, and had been never seen more. Moorish fatalism appears to dictate the formula of these inscriptions. The murderer's name is not mentioned, it would seem that he is only the instrument of an inevitable and predestined crime. Thus, for instance, "Aqui mataron al Pedro Gama," (*here Pedro Gama was slain*:) then follow the date of the deed and the final prayer for his soul's repose, "Ruegad a Dios para su alma." Generally speaking, assassinations are caused by revenge or quarrels, and must not be imputed to the robbers, of whom there are plenty in the Serrania. These fellows are content with plundering the travellers who fall into their hands, and when disappointed in their hopes of booty, their ill-humour is wreaked in a hearty cudgelling.

The vegetation of these mountains resembled that of the Sierra Bermeja, of which they are a prolongation. I saw the same plants, and *Cistus populifolius* was in high beauty. It was noon before we attained the summit of the mountain pass; for the slopes are long; and the crest is more distant from the sea in this part of the chain than it is at Estepona. The highest point has an elevation of 3600 feet, and the only trees are stunted firs, which find their limit there: of *Pinsapos* I observed none. The sky was chill, and rain fell on the summit, while I saw the whole coast glowing under the rays of the sun. On the northern side, spring prevailed, and some few Oaks, which I passed, were hardly yet in flower. Presently I came upon thick blooming copses of *Genista caudicans* and *triacanthos*: the *Erica Australis*, a charming heath, which had not previously fallen under my notice, fringed the slopes, and along with *Saxifraga granulata*, adorned the brink of a little stream, which afforded specimens of *Montia fontana* and *Stellaria uliginosa*. We were in a perfect labyrinth of mountains and valleys. Before us lay the village of Igualeja, situated in a deep ravine; while, on the left, the valley of the Rio Guénal was dotted with numerous hamlets. So many hills and deep ravines intersect this country, that the communication is frequently very circuitous, even between points which are almost close together; and the mere aspect of the district suffices to explain how it came to pass that the French could never maintain themselves in possession of it, and why it is the chosen haunt of contrabandists and of robbers.

Through a forest of *Chestnuts* and *Cork-oaks* we descended to the village of Igualeja. The fruit of the former tree, which abounds in the Serrania, constitutes, as in Corsica and Sicily, the chief food of the people. The hedges of Bramble, Whitethorn, and other shrubs of central Europe, unknown on the plains of Spain, attest a cold and damp climate, though I observed some Olive-trees in the sheltered parts of the valley, and even Oranges in the gardens. The village is large: its narrow streets and ancient dilapidated mansions, often graced with huge coats-of-arms and heraldic bearings above the doors, had a wholly different air from the sea-coast towns, and indicated much dissimilarity in the manners and habits of its population. We made but a brief halt at Igualeja, for my guide was suspicious of the inhabitants of the Sierra, and the approaching fair caused a great influx of travellers; so, reminding me often that we had still three leagues to go, he pressed onwards, with the plea that we should thus avoid any ambuscade which thieves might send forwards, to waylay us on the journey. I yielded to his remonstrance, and we scaled, with fresh courage, the bare mountain which separated us from Ronda.

By the road-side, grew many interesting plants, and particularly a new species of *Reseda;* but every brief halt elicited the lamentations of my guide, who watched despairingly the closing of the day, and repeatedly assured me that he would not be answerable for the consequences of my delay. Presently we encountered, in the middle of the defile, a mounted party returning from the town: my guide exchanged a few words with the leading horseman, a robust and fresh-looking fellow, wearing the garb of a *majo;* and his countenance instantly assumed a more contented aspect: he assured me there was nothing to fear, I might gather plants till midnight if I would, for the *valiente* whom we had met bore such a character for courage, that his having traversed the road was sufficient to clear it from any suspicious characters. Now, the personage whom we had seen was the richest inhabitant of the village of Igualeja, and probably also headed a party of smugglers, his well-known reputation for personal bravery having gained for him, in this semi-civilized land, all the notoriety and esteem attached to a *condottière* of the Middle Ages.

The mountains we were now traversing presented, I thought, many points in common with the Jura. In the platforms which occupied the highest portion, I noticed that the horizontal and denuded layers were often similarly cleft into broad crevices, about two feet deep. There the inhabitants of the neighbouring huts, in their destitution of available soil, had sown rye in the vegetable soil which lay at the bottom of the depressions. Farther off, were arid plains, decked with dense tufts of *Pœonia lobata*, and presenting hardly any plants but *Helianthemum rubellum* and *piliferum*, and *Hippocrepis comosa*. This country was most thinly peopled, except by flocks of sheep, and here and there a shepherd, who, wrapped in his mantle, might be descried in profile against the rays of the setting sun, as he lay outstretched on an eminence in the distance. Night was approaching when we began to descend upon Ronda; and my guide, who was a smuggler, like all his brethren of the Serra, and whom every rock served but to remind of former exploits, beguiled his own fatigue and mine, by long stories of his expeditions during the dark winter nights, and details of the risks which he had encountered while the country lay buried under its mantle of snow. I began to fear that we should surely lose our way; for not a track, nor a building of any kind could be descried, which might indicate the road to Ronda. But presently I saw the lights of the town and some old walls which encircle it; and what a contrast was presented between the rugged and uninhabited district we had quitted, and the illumined streets, thronged with a populace eager for the morrow's festivities! I began to ask myself where I should lodge, in this town thronged with strangers: the posadas were of course more than full; and I had been unable to bespeak an apartment, according to the usual custom. By a lucky chance, I met with some Malaga acquaintances, who quickly directed me to the house of a worthy scrivener, who, like all the people of this town, was glad to let any spare rooms in his house during the time of the fair.

Ronda is situated about 2,500 feet above the level of the sea. It consequently enjoys a clear and fresh air: the heat is never extreme; and the plants of the warm regions, as the Orange, the Indian Fig and the Agave do not succeed there. On the 22nd of May, the Lilacs were still in flower in the gardens. The situation of this town, in itself striking, is doubly so, when it breaks suddenly on the view. I had come at night and was unprepared for it. South and east the horizon is bounded by the mountains and slopes which we had passed to enter the town. In that direction, the scenery is rough and wild: the absence of trees and of cultivation convey the idea of solitude and space; but on looking south-west, you find yourself placed on the very brink of a steep rock, 700 feet high. On its abrupt platform the town is built; and this shelf is cleft in twain by a narrow and deep precipice which divides the town of Ronda into two portions; while at the bottom rolls a brawling stream, which hurries downward into the valley. A bridge is thrown across the gulf, and through its iron balustrades you look down into the chasm. The Moors erected this striking and useful mode of communication. The edge of the escarpment, or *Tajo*, as it is called in the country, is occupied by houses, and by the Alameda, a charming promenade planted with trees, from which the eye follows the windings of the river and finally rests upon the delightful valley. Groves of evergreen oak, gardens and mills perched picturesquely among the rocks, and among which the water flows in many broken streams, and in the distance many ranges of mountains, overtopped by the Peak of San Christobal, all these combine to form a landscape which is like nothing else, and of which the peculiarities are indelibly graven on the beholder's memory.

All was life and activity at Ronda. The wide plain, north of the town, was dotted with animals of all kinds, resembling the encampment of some nomade population. I remarked several fine Andalusian horses—a breed which produces noble chargers. The crowd in the streets was immense. All the men, from the Contrabandistas and the Serranos to the citizens of Cadiz and Seville, wore the *Majo* dress: apparently they would have been ashamed to assume the French garb on the occasion of such a solemnity as the fair of Ronda. These good Spaniards vied with each other in the elegance of their national garments, the brilliancy of the colours and the rich embroidery of their *jaquetas.* Even some Englishmen had adopted this costume, though their walk and countenance soon revealed their origin. In the long rows of stalls and tents were sold alike the sweetmeats and playthings seen at our fairs and valuable articles of goldsmith's work. Here a guitar-player attracted the crowd by his performance, and there a conjuror executed his feats of legerdemain; while everywhere you heard the cries of the Aguadores, or water-sellers, and the constant tinkling of the little bells with which the lampsellers announce their approach.

The throng pressed towards the *Plaza de Toros,* and wrangled with one another for tickets to see the sport (*funzion*) of the afternoon. Dear as was the price, half a piastre for the higher row, and twice as much for the seats which are on a level with the circus, nobody hesitated to give the money. The poorest mountaineer would have sold his last garment, rather than forego this exhibition. The fight was to begin at four o'clock; and before three every place on the shady side was full. This Plaza is considered one of the largest and handsomest in all Spain: it belongs to the *Maestranza,* that is, to the nobility of Ronda, who keep it in repair, and let it out annually to the manager of the bull-fights. An open building, two stories high, supported by a range of columns, encircles the arena; and each contains an amphitheatre of seats, separated by a strong wooden partition 5 feet high from the lists. From five to six thousand persons were assembled, all in the highest state of joy and impatience. The young people were collected in *pueblos,* that is, according to the town or village whence they came: those from Malaga were the most numerous and noisy. They shouted, yelled, abused each other, and above all greeted the ladies with the coarse compliments peculiar to the Andalusians: they sang their popular airs, with the burden and accompanying cadence of their *varas,* long white staves stripped of the bark, which are part of the necessary costume of the *Majo*. In an instant, silence prevailed; for a body of soldiers came and took their stations at the opening of the arena, to prevent any of the spectators from getting in.

The scene which followed reminded me of the former days of chivalry, the usages of which are still scrupulously preserved in this ceremony. The Toreadors made their appearance to the sound of martial music, clad in brilliant costume, the little scarlet cloak over the shoulder, and the hair twisted at the back of the head in a kind of knot, called a *moño*. They presented themselves in order under the balcony allotted to the Maestranza to whom they made obeisance and then dispersed themselves over the arena. Three Picadors followed, lance in hand, their heads covered with enormous broad-brimmed hats. A moment of throbbing interest followed, when the bull darted from a small opening and presented himself on the stage. But I had neither pleasure in seeing nor now in describing the butchery of horses and bulls which followed; and I soon withdrew from the spectacle, convinced that while there are numbers of high-minded Spaniards who blush at the delight taken in these butcher sports, and who are sorrowfully convinced that their effect is to demoralize and brutalize the populace, yet that the time is still far off, ere the people of this country can be weaned from an amusement which appeals to their inherent natural taste for what is cruel and sanguinary. Indeed it is much to be regretted that government lends its aid to solemnize these spectacles. "By order of the Queen," are words attached to all the bills which announce a bull-fight, and the highest authorities of the place are always present. The sport is considered in the light of a real science; it is subject to fixed and numerous laws; and the late King Ferdinand, who was passionately fond of these exhibitions, founded an Academy at Seville for the instruction of the Toreadors. Many works are written on the subject: at this very time, a new one has just been published called *Tauromachia*, edited

165. L. *stenophyllus*, n. sp.; connato-prolifer pileo infundibuliformi subfusco centro maculato margine involuto, stipite crasso ligneo sursum in pileum dilatato sordide floccoso-pruinoso; lamellis pallidis descendentibus postice ex indumento stipitis subtectis integris angustissimis. (TAB. XVII. XVIII. *f.* 1).—*Gardner*, n. 34.

Peziza Zeylonica, Houttuyn. in Linn. Pflanzensyst. Vol. 13, *p.* 51, *tab.* 105, *f.* 4.

On the ground in open places. Peradenia, Ceylon. June, 1844.

Cæspitose connato-proliferous. Pileus nearly 5 inches across, hard and rigid when dry, brownish with darker spots, nearly smooth, but sometimes obscurely tomentose, infundibuliform.

Margin involute.

Stem 3 inches or more high, 1 inch thick, solid, hard, and corky when dry, nearly equal, expanding above into the pileus, clothed with dirty greyish matted down, which nearly covers the gills for a third part of their length.

Gills pallid, extremely narrow, entire, slightly forked below, decurrent.

Allied to L. *Princeps*, but distinguished at once from that and its allies by its extremely narrow gills and other points. It is one of the most splendid species of the genus.

TAB. XVII. XVIII. *f.* 1. *L. stenophyllus, nat. size.*

166. L. *obnubilus*, n. sp.; pileo carnoso-lento tenui infundibuliformi regulari glabro fusco concentrice obnubilato, margine tenui arcuato involuto; stipite firmo solido sursum griseo-fusco velutino-pulverulento, deorsum attenuato radicante; lamellis albis integris subdistantibus decurrentibus.—(TAB. XIX. *f.* 3). *Gardner*, n. 33.

On the ground in shady places. Peradenia, Ceylon. June, 1844.

Pileus nearly 5 inches across, deeply infundibuliform, smooth, rather thin, especially towards the involute margin brown, clouded concentrically with darker fasciæ.

Stem including the rooting base 5 inches high, ¾ of an inch thick, firm and solid, much attenuated below, greyish brown slightly tinged with purple, clothed with minute velvety meal.

Gills rather distant, white, (ochraceous when dry), entire, decurrent, not forked.

Allied to L. *scleropus*, but differing in its less woody stem, entire gills, even margin, and other points.

It varies with a short somewhat bulbous stem.

Tab. XIX. *f.* 3. L. *obnubilus, nat. size.*

167. L. *cartilagineus*, n. sp.; cæspitoso-gregarius e communi basi enascens; pileo albido subsericeo: stipitibus validis contortis strato crasso cartilagineo-viscoso in velum universale producto tectis, intus spongiosis; lamellis integris liberis pallidis.—*Gardner*, n. 90.

Found about four feet below the surface of the earth, growing on the Comb of Termites, Ceylon. June, 1845.

From a common expanded base spring, numerous stems of which probably a few only produce perfect pilei.

Pileus 2 inches broad, white, silky towards the margin.

Stem 8-10 inches high, twisted tough externally, spongy within, covered with a thick viscoso-cartilaginous coat, which is prolonged into a veil, which at first covers the pileus, and after bursting forms a broad persistent collar.

Gills pallid, entire.

The specimens before me of this very curious plant have been very much injured by insects, which have nearly destroyed the gills. The description is drawn up from the drawing and specimens carefully compared. The stems resemble more a dry sea-weed than a Fungus. It is possible that more perfect specimens might justify the establishment of a new genus.

*L. *exilis, Klotzsch. Mss. Fr. Ep. p.* 393.—*Gardner*, n. 67, 81.

On old trees. Hautane, Ceylon. Aug. 1844.

When fresh according to the accompanying drawing, the colour of the pileus is a yellowish brown, that of the stem and gills pale yellowish-white. In the dried specimens there time to time, I observed fields of rye, ill enough cultivated and surrounded with walls of dry stones; in short, this district has so little picturesque beauty, that it rather resembles a mountainous part of central France, than Andalusia. We came to Atayate, a wretched village, much like the generality in this neighbourhood; and as soon as we descended the southern face of the hills, the plants of the warm region instantly re appeared. The *Chamærops*, *Teucrium fruticans*, and several conspicuous *Umbelliferæ* and thorny *Genistæ* abounded.

The route we now followed was that by which Gomez, the Carlist chief, had made his incursion into Andalusia the previous year. He so unexpectedly entered Ronda that the other party had only a few hours in which to flee to Tarifà. During the two days he spent in the town, he committed no excesses: his motive, however, was less generosity than prudence, for apprehending that his retreat might be cut off, he shunned giving cause for vengeance, if he were captured. To discomfit the plans of his pursuers, he took the track by which I was now travelling, marched boldly past Tarifà and after a skirmish with General Narvaez, made his escape in the direction of Arcos. We passed in succession three or four villages, situated in barren and rocky spots, where cultivation is hardly attempted, because the smuggling trade has absorbed all the energies of the inhabitants. We overtook a peasant and accompanied him some way: he travelled alone and drove before him an ass, laden with a small chest. He came from the frontiers of Murcia and had been selling, all along, his stock of saffron, of which very little was now left; and he was going to Gibraltar, there to invest his cash in articles of merchandize, which he would then smuggle back into his own country. We arrived together at Gancin, the common halting place between Ronda and Gibraltar, a large village, commanded by a castle, now picturesque in ruins, but which was of note during the wars between the Christians and the Arabs. Hence there is a fine view of the level country and the course of the River Guadiaro. The following morning, on the slopes leading to the river, I collected *Hedysarum Fontanesii* and *Cleome Lusitanica*, the latter covering large tracts with its bright blue flower. The road was monotonous; and the day passed chiefly in crossing the numerous windings of the Guadiaro, which sometimes divides into several branches and again spreads in broad and shallow ponds. There was hardly any vegetation on the sandy soil, except *Genista sphærocarpa* and the *Retamo* with its slender and drooping branches. Towards evening we left the river, and entered upon a fine district, clothed with woods, chiefly composed of three noble species of *Oak*. Flocks of sheep enlivened the landscape; and the setting sun lent a bright glow to the scene. Under the shade of these forests grew *Helianthemum halamifolium* and *H. Libanotis*, *Anthyllis hamata*, several species of *Ononis* and *Centaurea polyacantha*. The *Hedysarum coronarium* formed level beds of scarlet flowers; and *Cerinthe major* showed its drooping purple spikes. Night finally drove me from this place of delight, to the high satisfaction of my people, who had eaten almost nothing all day; for having made some miscalculation about the distance, we had failed to halt at the only Venta on the road. Mending our pace, we soon reached San Rocque, a small town, with narrow and poor streets, but which possesses a degree of importance, from its vicinity to Gibraltar.

(To be continued.)

MYOSURUS ARISTATUS, *Benth.*

Mr. Bentham has kindly pointed out to me an error into which I have fallen, in the omission of a second species of *Myosurus* in Mr. Geyer's list of plants, given at p. 67 of this volume. Among my eight specimens of *Myosurus* from Mr. Geyer, (his n. 322), one is certainly a distinct species: and, as it proves, identical with that recently described by Mr. Gay, from Chili, (and which I also possess from

Bridges; his last Chilian collection), under the name of *M. apetalus.* My Chilian specimen, as well as that from North America, does bear petals: the name is therefore inadmissible. That of Mr. Bentham is unexceptionable, and at once indicates the most important specific distinction.

Myosurus *aristatus,* (Benth.), spica oblongo-acuminata sub-20-25-gyna, carpellis stylo persistente divergente (carpello ipso longitudine æquante) aristatis laxe imbricatis.

M. aristatus, *Benth. mst.*

M. apetalus, *Gay, Hist. Chil. Bot.* 1, *p.* 31. *Atlas, Tab.* 1, *f.* 1.

Hab. Moist places in the Cordillera of Chili at Los Patos, Province of Coquimbo, elev. 11,200 feet above the level of the sea, *Gay.* Similar situations, east side of the Andes, n. 1246, *Bridges.* Borders of pools in the Gamass Prairie of the Cœur d'Aleine, Rocky Mountains. *Geyer,* (n. 322, in part.)

(The following character may now be given to

M. *minimus;* spica lineari-elongata, pistillis numerosissimis, carpellis stylo persistente perbrevi arcte imbricatis.

M. *minimus; L. et Auct.*—M. *Europæus, Gray, Br. Pl.* M. Shortii, *Rafin.*

Hab. "General distribution, lat. 30-60 Europe; Asia; America;" (*Watson*), whence it extends to the Oregon. Extratropical South America; at Port Desire, *Darwin.*)

Peperomiæ *Species duas novas indicat* F. A. G. Miquel.

1. *Peperomia ciliolata;* carnoso-succulenta, præter foliorum margines glabra, foliis oppositis quaternisque modice petiolatis obovato-vel elliptico-orbicularibus obtusis emarginatis vel brevissime acutis, subtus pallidis uninerviis, supra saturate viridibus nitidis totoque margine dense pubescenti-ciliatis, amentis . . . . .

Hab. . . . . . . ? *Colitur in Horto Kewens.,* ex Horto *Ducis Bedford* communicata. Num e *Mexico Australiore?*

Species distincta, sed ob flores deficientes quoad sectionem adhuc inserta, habitu ad P. *latifolium*, *Syst. Pip.* accedens. *Caules* crassi, carnosi, pallidi. *Petioli* aliquot lineas longi, semiteretes, antice canaliculati, marginibusque subciliolati, pallidi. *Folia* in eodem verticillo, si plus quam 2 adsunt, diversiformia, ½-1 pollicaria, prorsus avenia, nervo medio subtus colore tantum profundiore distinguendo.

2. *Peperomia pallescens;* suffruticoso-carnosa, ramis crassis obtuso-angulatis, foliis alternis vel verticillato-confertis, petiolis antice profunde canaliculatis, laminis elliptico-ovatis acuminatis, basi leviter et conniventi-cordatis, carnoso-membranaceis utrinque 3-4-costatis, margine denticulato-undatis, supra saturate viridibus marginibusque puberulis, subtus pallidis glandulosis inque costis parcissime pilosulis, pedunculis plerumque terminalibus geminosisque angulato-sulcatis, amentis elongatis densifloris, bracteis pedicellato-peltatis orbiculatis glandulosis, ovario immerso vertice plano.

HAB. Guatemala; *m. v. in Horto Societ. Horticult. Londinensis.*

Rami griseo- vel fuscescenti-pallidi, petiolorum cicatricibus elevatis subreniformibus notati. *Petioli* 2-1 poll. *Folia* 4-3 poll. longa, costis haud longe a basi ortis 7-9-plinervia, parce reticulata. *Pedunculi* petiolis crassiores eosque vulgo superantes. *Amenta* elongata, cylindrica, sursum attenuata, densiflora, glanduloso-punctata, foveolata. *Stigma* in medio ovario anticum puberulum demum fuscum et prominulum. *Filamenta* complanata, immersa. *Antheris* fuscis.

Kew, m. Julii, 1847.

FLORÆ TASMANIÆ SPICILEGIUM: *or, Contributions towards a Flora of* VAN DIEMEN'S LAND; *by* J. D. HOOKER, M.D., F.R., L., and G.S.

(*Continued from p.* 286).

RUBIACEÆ.

1. Galium *vagans,* n. sp.; totum ciliis patentibus subrecurvisve hispido-pilosum, caule elongato gracili diffuso vage ramoso, verticillis remotis, foliis parvis quaternis ellipticis subacutis utrinque hispidulis, pedunculis axillaribus folio brevioribus bi- rarius- trifloris, floribus minimis, fructibus glaberrimis.

HAB. Grassy places; *Gunn.*

Caules pedales et ultra. *Folia* pro planta minima, 2-3 lin. longa. *Flores* valde inconspicui.

2. Galium *ciliare,* n. sp.; pusillum, erectum, laxe hispido-pilosum, internodiis folio paulo longioribus, foliis elliptico-ovatis subacutis utrinque laxe ciliatis, pedunculis folio subæquilongis plerisque tri-floris, floribus flavis, ovario glaberrimo.

HAB. Dry pastures, &c. abundant; *Gunn.* :—*v. v. n.*

Caulis erectus, subsimplex, 3-5-uncialis, pilis patentibus laxe densiusve hispidus v. molliter pilosus. *Folia* 2-4 lin. longa, bis longiora quam lata, plus minusve ciliata et pilosa. *Pedunculi* axillares, plerumque versus apicem caulis subpaniculati.

3. Galium *densum,* n. sp.; scaberulum, caulibus elongatis diffusis intricatim ramosis, angulis scaberulis, verticillis remotis, foliis quaternis obovato-ellipticis lineari-oblongisve planis marginibus recurvis super punctis sparsis asperis subter glaberrimis, pedunculis floriferis gracilibus fructiferis folio multoties longioribus plerisque bifloris, fructibus setis patentibus uncinatis hispidis.

HAB. In subalpine situations; *Gunn.*

Caules tenues, 2-3pedales, angulis setis sparsis, brevibus, subrecurvis hispiduli. *Internodia* 2-uncialia. *Folia* sicca viridia, 3-4 lin. longa, latitudine varia, obovata, elliptica v. lanceolata.

Statura variabilis. G. *australi* accedit, sed tota planta minus scabrida, nullibi pilosa, pedunculisque elongatis et bifloris conspicue differt.

4. Galium *squalidum*, n. sp.; totum hispido-pilosum, caulibus ascendentibus e basi ramosis pilis patentibus hispidis, internodiis folio bis terve longioribus, foliis quaternis lanceolatis acutis utrinque hispidis marginibus recurvis, pedunculis floriferis folio longioribus bi-tri-floris, ovariis hispidis.

HAB. Dry places; *Gunn*:—*v. v. n.*

G. *australi* affine sed hispidius; differt caulibus longioribus, foliis angustioribus, pedunculisque elongatis et gracilibus.

5. Galium *albescens*, n. sp.; totum pilis mollibus patentibus canescens, caule valido suberecto parce ramoso, internodiis ramorum folio æquilongis brevioribusve, foliis quaternis elliptico-ovatis acutis marginibus recurvis utrinque molliter hispido-pilosis sordidis, pedunculis axillaribus solitariis unifloris floriferis brevibus fructiferis validis decurvis, fructu setis uncinatis hispido.

HAB. Mount Wellington, in rocky places; *Gunn.*

Spithameum et ultra. *Folia* 3 lin. ad ½ unc. longa, cinerea v. sordide albida. *Pedicelli* fructiferi validi, folio longiores, horizontales, apice decurvi.

6. Galium *curtum*, n. sp.; pusillum, caule breviusculo valido erecto diviso pilis retrorsis scaberulo, foliis brevibus quaternis senisve obovato-oblongis obtusis coriaceis utrinque glabratis marginibus tenuiter recurvis cartilagineis ciliatis, floribus axillaribus solitariis binis ternisve, ovario glaberrimo.

HAB. Hampshire hills; *Gunn.*

Caulis 3-uncialis, robustus, erectus. *Folia* parva, 3 lin. longa, valde coriacea. *Flores* perpusilli; pedunculis folio brevioribus.

1. Asperula *subsimplex*, n. sp.; glaberrima, caule gracili suberecto simplici v. diviso, foliis quaternis anguste linearibus obtusis subacutisve marginibus recurvis rarissime punctis remotis scaberulis, pedunculis in axillis supremis solitariis binis ternisve, 1-3-floris.

Hab. Circular Head and Lake St. Clair; *Gunn.*

Caules laxe cæspitosi, graciles, spithamæi, leves et glaberrimi v. superne angulis obscure scaberuli, internodiis longitudine variis. *Folia* parva, 2-3 lin. longa, sub ½ lin. lata, utrinque angustata. *Pedunculi* foliis æquilongi v. elongati. *Corollæ* campanulatæ, glaberrimæ; lobis brevibus obtusis.

2. Asperula *Gunnii*, n. sp.; glabriuscula, caule decumbente ramoso, ramis erectis angulis hispido-scaberulis, foliis quaternis senisque inæqualibus obovatis lineari-oblongisve utrinque lævibus marginibus recurvis obscure scaberulis, pedunculis ex axillis superioribus solitariis v. confertis 1-3 floris.

Hab. Alpine places, common; *Gunn:—v. v. n.*

Caulis plerumque decumbens, exemplaribus montanis brevis, erectus, validus; ramis divaricatis. *Verticilla* remota v. contigua. *Folia* 3-5 lin. longa, coriacea, sicca nigrescentia, utrinque glaberrima. *Corolla* glaberrima, tubo subelongato.

3. Asperula *scoparia*, n. sp.; caule decumbente e basi ramoso, ramis ascendentibus pilis brevibus hispidis, foliis senis anguste linearibus patenti-recurvis in apicem piliferum angustatis marginibus recurvis parce setoso-ciliatis, pedunculis axillis supremis confertis folio brevioribus, corollæ tubo gracili fauce nuda.

Hab. Lawrenny, in dry gravelly places:—*v. v. n.*

Caules e radice plurimi, decumbentes, ramosi; ramis ascendentibus, rigidis, hispidulis, 3-5 unc. longis. *Verticilla* ramis junioribus conferta, senioribus remota. *Folia* uniformia, sub 4 lin. longa, vix ½ lin. lata, pleraque recurva, in apicem diaphanum subpiliferum gradatim acuminata.

Flores majusculi, 2½ lin. longi. *Corolla* infundibuliformis, tubo gracili, fauce glaberrima.

4. Asperula *conferta,* n. sp.; dioica, glabriuscula, caulibus pluribus confertis ascendentibus glaberrimis v. obscure scaberulis, foliis senis patenti-recurvis anguste linearibus acutis acuminatisve marginibus recurvis ciliato-scaberulis, pedunculis brevissimis in axillis supremis fasciculatis, corolla mascula infundibuliformi, fœminea abbreviata 4-dentata.

Var. *a.* internodiis folio longioribus, caule elongato.

Hab. Dry places, abundant; *Lawrence, Gunn:—v. v. n.*

Var. *β.* internodiis folio brevioribus, caule abbreviato.

Hab. Woolnorth; *Gunn.*

Caules 4-6unciales ad pedalem, rigidi, ascendentes v. suberecti, pluries divisi, parce scaberuli v. glaberrimi et politi. *Folia* 3-5 lin. longa, rigida, marginibus recurvis scabrido-ciliatis. *Pedicelli* folio breviores. *Corollæ* florum fœm. breviores quam masc.

5. Asperula *pusilla,* n. sp.; dioica, hispidula, caulibus decumbentibus, ramis robustis ascendentibus erectisve confertis foliisque utrinque scaberulis, internodiis plerisque folio brevioribus, foliis senis lineari-obovatis oblongisve obtusis marginibus recurvis scabrido-ciliatis, floribus axillis supremis confertis, pedunculis folio brevioribus, corolla infundibuliformi hispidula, masc. elongata, fructibus brevissime pedicellatis glaberrimis.

Hab. Alpine situations; *Lawrence, Gunn:—v. v. n.*

Caules conferti v. subcæspitosi, ramis 4-uncialibus. *Folia* parva, hispidula.

6. Asperula *minima,* n. sp.; cæspitosa, caulibus gracilibus confertis erectis ascendentibusve basi ramosis glaberrimis v. parce scaberulis, foliis parvis anguste lineari-obovatis acuminatis apice diaphano, pagina superiore marginibusque recurvis scaberulis, pedunculis terminalibus folio longioribus, floribus majusculis, corollis glaberrimis.

Hab. George Town; *Gunn.*

Omnium specierum mihi notarum minima. *Caulis* vix 3-pollicaris, gracilis. *Folia* 1½-2 lin. longa, angusta.

1. Coprosma *hirtella,* Lab.

Var. *α.* foliis oblongis glabratis v. glaberrimis nunc politis.—C. hirtella, *Lab. DC.* C. venosa, *A. Cunn.* mss. (in herb. Hook.)

Var. *β.* foliis majoribus late ovato-rotundatis cuspidatis asperrimis.—C. cuspidifolia, *DC.* C. aspera, *A. Cunn.* ms. (in herb. Hook.)

Hab. Common :—*v. v. n.*

2. Coprosma *Billardieri,* ms.—C. microphylla, *Cunn.* ms. (in herb. Hook.) Marquisia Billardieri, *DC. Prodr.* Canthium quadrifidum, *Lab. Fl. Nov. Holl.*

Hab. Damp woods, common :—*v. v. n.*

3. Coprosma *nitida,* n. sp.; erecta robusta ramosa, ramis ramulisque puberulis, foliis parvis glaberrimis brevissime petiolatis coriaceis elliptico-oblongis obtusis subacutisve aveniis marginibus recurvis, floribus sparsis, calyce 4-fido segmentis oblongis obtusis, corolla profunde 4-partita laciniis linearibus reflexis obtusis.

Hab. On the high mountains, abundant :—*v. v. n.*

Frutex erectus, 4-6-pedalis, ramosus, ramis robustis, ramulis brevibus foliosis. *Folia* parva, ¼-⅙ unc. longa, valde coriacea. *Flores* parvi. *Antheræ* lineari-oblongæ, utrinque rotundatæ. *Bacca* ⅓ fol. longitudine.

4. Coprosma *pumila,* Hook. fil. *in Flor. Ant. Suppl. p.* 543, et in *Pt.* 1. *p.* 22. *t.* 16, *B. sub nom.* C. repentis.

Hab. On the lofty mountains and in alpine plains, *Gunn.* Omnia C. *repentis,* (Fl. Ant. l. c.), sed foliis junioribus pilosis ciliatis, baccisque dicoccis.

1. Opercularia *ovata,* n. sp.; glabriuscula, caule basi lignoso, ramis gracilibus prostratis ascendentibusve subflaccidis glabris, foliis petiolatis ovatis obtusis subacutisve ciliatis utrinque glabratis parce pilosisve submembranaceis, capitulis axillaribus breviter pedunculatis, floribus dioicis (*Gunn*) triandris, corolla infundibuliformi, filamentis longe exsertis.

HAB. Launceston; *Gunn.*

Caulis basi subrepens, ramis gracilibus 3-6-pollicaribus, obtuse angulatis, glaberrimis glabratisve. *Folia* ½-¾ unc. longa, in petiolum 2-3 lin. longum abrupte angustata, siccis marginibus tenuiter recurvis, pilis sparsis ciliata; vaginis 1 lin. longis. *Capitula* axillaria, ⅓-½ unc. diametro, 6-8-flora, matura pilosa, calycis laciniis subulatis acutis. *Corollæ* sub 1½ lin. longæ, ore quadrifido, genitalibus exsertis.

2. Opercularia *varia*, n. sp.; pusilla, hispido-pilosa v. glabrata, caulibus e radice lignosa perplurimis erectis prostratisve gracilibus angulatis, foliis brevissime petiolatis rigide coriaceis ovatis lineari-oblongis linearibusve obtusis acutisve utrinque hispido-pilosis scabridis glabratisve, vaginis brevissimis, capitulis axillaribus breviter pedunculatis, corolla late infundibuliformi calycis laciniis subulatis æquilonga, staminibus 2.

Var. *α. hispidula;* foliis majoribus lineari-oblongis obtusis, ramis diffusis.

Var. *β. scabrida;* hispido-pilosa, foliis oblongis ovatisve obtusis, ramis diffusis v. suberectis.

Var. *γ. filiformis;* glabrata v. glaberrima nitida, foliis linearibus acutis, ramis erectis v. ascendentibus.

HAB. Dry places abundant:—*v. v. n.*

ARALIACEÆ.

1. Panax *Gunnii*, n. sp.; fruticulosa, caule ramis petiolis pedunculisque strigoso-hirtis, foliolis 3-5 rarius solitariis junioribus sinuato-pinnatifidis senioribus grosse serratis, costa strigosa v. glabrata, pedunculis petiolo æquilongis, umbella multiradiata, stylis 2.

HAB. Dense humid forests near McQuarrie harbour; *Gunn.*

Fruticulus erectus, 2-3-pedalis; caule basi simplici, lignoso, glabrato, crassitie pennæ anatinæ, superne ramoso, hispido-strigoso, setis rufis appressis. *Petioli* graciles, 1½-1 unc. longi. *Foliola* 1-2-uncialia, linearia, lineari-lanceolata, obovato-lanceolata v. varius ovata, lateralia multoties minora, seniora grosse serrata, juniora profundius nunc ad costam in lobulos rotundatos secta, siccitate luride viridia. *Pedunculi* solitarii. *Pedicelli* graciles, 3 lin. longi, floresque glaberrimi.

UMBELLIFERÆ.

1. Hydrocotyle *peduncularis*, Br. *in DC. Prodr.*

Var. *α*. foliis inciso-dentatis super glabratis.

Var. *β*, foliis obtuse 5-lobis, lobis 3-crenatis glabriusculis, petiolis hirsutis, caule crassiusculo.

Var. *γ*, foliis obtuse 5-lobis, lobis 3-crenatis dentatisve hirtis, petiolis pedunculisque hirsutis, caule gracili.

Var. *δ*, foliis profundius 3-5-lobis, lobis obtuse 3-fidis crenatisve utrinque petiolis pedunculisque glabratis v. parce pilosis, caule crasso.

HAB. In alpine and subalpine districts abundant:—*v. v. n.*

H. *peduncularis*, Sieb., a planta Brunoniana differt glabritie fructibusque minimis.

2. Hydrocotyle *Tasmanica*, n. sp.; caule graciliusculo, petiolis pedunculisque gracilibus pubescentibus, foliis reniformirotundatis obtuse 5-7-lobis utrinque hirtis lobis 3-5-crenatis, pedunculis petiolo æquilongis sub 6-floris, carpellis utrinque 1-costatis.

HAB. Arthur's Lakes; *Gunn.*

Caules 3-5 unc. longi. *Petioli* ½ unc. ad pollicares, graciles. *Folia* latiora quam longa, ½ unc. lata, submembranacea. *Pedunculi* graciles, petiolis æquilongi. *Capitula* parva, sub 6-flora.

3. Hydrocotyle *gracilenta*, n. sp.; caule sublignoso prostrato radicante, ramis herbaceis, petiolis pedunculisque subæquilongis hirtis, foliis membranaceis cordato-rotundatis 3-lobis lobis lateralibus bifidis majoribus obtuse 3-crenatis utrinque sparse hirtis glabratisve, capitulis parvis 6-floris, carpellis utrinque 1-costatis.

HAB. St. Patrick's River; *Gunn.*

Caules repentes, sublignosi, apices versus graciliores, herbacei, ad basin foliorum nodoso-incrassati. *Petioli* 1-1½-unciales, graciles. Folia membranacea, ½ unc. lata, utrinque pilis sparsis hirta, subprofunde 3-loba v. 5-loba, lobis lateralibus parvis, sinubus subacutis. *Capitula* minima.

4. Hydrocotyle *vagans*, n. sp.; caule gracili elongato, petiolo gracili glabro, foliis orbiculari-reniformibus membranaceis 5-7-lobis utrinque sparse pilosis glabratisve lobis obtuse crenatis, pedunculis glabratis petiolo multoties brevioribus, capitulis parvis sub 6-floris, carpellis utrinque 1-costatis.

HAB. S. Esk River, in flooded places; *Gunn.*

NOV. GEN. *Hydrocotylearum* (?) MICROSCIADIUM, *Hook. fil.*

Calycis tubus breviter obconicus; limbus 5-fidus, lobis ovatis, acutis, subcoloratis. *Petala* breviter stipitata, ovata, obtusa. *Stamina* petalis æquilonga. *Stylopodia* 2, crassa, glaberrima. *Styli* 2, validi, subulati, recurvi. *Fructus* immaturus elongato-obconicus; mericarpiis semiteretibus, obscure 5-jugis, ad commissuram subcontractis, vittis nullis?—Herba *acaulis, glaberrima.* Folia *petiolata, lobata, coriacea.* Scapus *erectus, filiformis, aphyllus, solitarius, apice biflorus.* Flores *basi* 1-*bracteolati, parvi, albidi.*

1. Microsciadium *Saxifraga.*

HAB. Loddon plains, in wet heaths; *Gunn.*

Planta pusilla, facie *Saxifragæ*, glaberrima, rigidula. *Radix* crassa, fusiformis, descendens, simplex v. bi-tri-ceps. *Folia* pauca, omnia radicalia, petiolata; petiolo patente, ½ unc. longo, gracili, rigido; lamina ¼-½ unc. lata, late ovato-cordata, triloba v. fere tripartita, lobis subcuneatis trifidis, segmentis acutis. *Scapus* gracilis, filiformis, rigidus, erectus, aphyllus, 4-uncialis, lævis, apice 2 rarius 3-florus. *Pedicelli* ¼-⅓ unc. longi, basi bracteolati; bracteolis lineari-oblongis, obtusis, concavis, pedicello ½ brevioribus. *Flores* parvi, sed pro planta conspicui. *Petala* albida, 1½ lin. longa, obtusa. *Stylopodia* majuscula. *Fructus* ½ maturus bis longior quam latus, teres? basi sub-attenuatus.

NOV. GEN. *Mulinearum.* DIPLASPIS, *Hook. fil.*

Calycis margo integerrimus, contractus. *Petala* ovata, obtusa, integra. *Styli* brevissimi. *Fructus* parallele biscutatus; mericarpiis late ovatis, dorso concavis evittatis; costis 5 filiformibus; 1 dorsali; 2 mediis angulos acutos mericarpii marginantibus; 2 intimis commissuralibus, commissura angustissima.—Herba *acaulis, glaberrima v. parcissime pilosa, carnosula, fructu* Bolaci *conveniente, sed habitu* Hydrocotylis. Folia *omnia radicalia, late cordata.* Scapi *solitarii, aphylli, apice umbellam simplicem involucratam sub* 10-*radiatam gerentes.* Involucri *foliola linearia.*

1. Diplaspis *Hydrocotyle.*

HAB. Arthur's Lake, and Lake St. Clair; *Gunn.*

Rhizoma repens, elongatum, teres, nodosum, crassitie pennæ anatinæ, fibras validas simplices emittens, apice foliosum. *Folia* petiolata; petioli superne pilosiusculi, ½ ad 2 unc. longi, crassi, recurvi, basi vaginantes, vagina membranacea, lamina ½ ad 1 unc. lata, carnosula, late rotundato-cordata, basi biloba, obscure et obtusissime cordata. *Scapus* foliis longior, carnosus, erectus, validus, superne laxe patentim pilosus. *Umbella* simplex, sub 10-radiata. *Involucri* foliola 3-7, membranaceo-herbacea, linearia v. oblonga, obtusa, medio uninervia. *Pedicelli* inæquilongi, fructiferi involucrum superantes. *Flores* minimi. *Ovarium* late ovatum, superne contractum. *Calycis margo* inconspicuus, paulo incrassatus. *Petala* curvata, ovata, obtusa. *Stamina* petalis æquilonga. *Styli* breves, suberecti, inferne in stylopodia conica gradatim dilatata. *Fructus* fere 2 lin. longus, glaberrimus. *Mericarpia* dorso valde compressa, late ovata, basi emarginata, lateribus acutis, costis filiformibus, ad commissuram angustam valde contracta.

NOV. GEN. *Saniculearum.* HEMIPHUES, *Hook. fil.*

Calycis margo obsoletus, v. inæqualiter 3-5-lobus; lobis lineari-oblongis, obtusis. *Petala* nulla, v. brevia, linearia. *Stamina* 5, filamentis inæqualibus. *Stylopodia* crassa, connata, elongata, in stylos 2 validos inæquilongos attenuata. *Ovarium* compressum, ovatum, unio-loculare, uniovulatum. *Fructus* oblique turgidus, breviter ovatus, stylopodiis persistentibus coronatus, costis inconspicuis, valleculis nullis; endocarpio firmo coriaceo v. crustaceo. *Semen* solitarium, pendulum, compressum, stylopodiis parallelum.

Albumen inter carnosum et corneum.—Herbæ *alpicolæ, cæspitosæ, acaules, scapigeræ, plus minusve pilis simplicibus tomentosæ.* Scapus *validus, erectus.* Involucri foliola *plurima, inter se æqualia, et infra mediam in cupulam lobatam connata.* Umbella *simplex, sub* 5-8-*flora, floribus parvis sessilibus v. brevissime pedicellatis.—Genus* Actinoto *indole, fructu defectuque petalorum accedens.*

1. Hemiphues *bellidioides;* pilis patulis fulvis tomentosa, foliis petiolatis obovato-oblongis grosse crenato-dentatis, scapo elongato, lobis calycinis ciliatis.

HAB. Recherche Bay; *Gunn.*

Radix crassa, fibrosa. *Folia* stellata, ¾ unc. longa, petiolo laminæ æquilongo, lamina subspathulata, obtuse crenata, marginibus tenuiter recurvis, coriaceo-carnosa, siccitate pallide viridia, utrinque pilis fulvis laxe tomentosa. *Scapus* 2-uncialis, gracilis, erectus, nudus, superne fulvo-pilosus. *Capitulum* (seu umbella) depresso-hemisphericum. *Involucrum* cyathiforme, ½ unc. diametr.; foliolis sub 8, coriaceis, ad medium connatis, apicibus obtusiusculis, glaberrimis v. subciliatis. *Flores* unisexuales? sub 5, brevissime pedicellati, foliolis involucri superati, pedicellis validis pilis fulvis immersis. *Ovarium* floribus staminiferis sterile? late ovato-oblongum; valde compressum, obscure costatum. *Calycis* lobi basi remoti, lineari-subulati, obtusi, dorso marginibusque setis patentibus elongatis ciliati. *Petala* nulla, v. rarius 1-2 inter lobos calycinos adjecta, nunc cum staminibus adnata; dum libera lanceolata, obtusa, erecta, plana, enervia, rubra? *Stamina* lobis calycinis opposita, iis bis longiora; filamentis incurvis; antheris didymis. *Stylopodia* magna, crassa, omnino coalita; stylis 2, liberis, brevibus, subincurvis, stamina superantibus. *Fructus* oblique turgidus, compressus, hinc obscure 1-, illinc 3-costatus, costis obtusis; endocarpium subcrustaceum pallidum, tegumento brunneo lævi undulato indutum. *Semen* endocarpio conforme; testa membranacea, ab albumine facile soluta; embryo minimus, hilo proximus.

2. Hemiphues *affinis ;* cæspitosa, foliis oblongo-spathulatis obtuse crenato-dentatis albido-pilosis junioribus petiolisque fulvo-tomentosis, scapo nudo v. 1-2-foliato, lobis calycinis glaberrimis.

Hab. Mount Fatigue, altitude 4000 feet ; *Gunn.*

Omnia prioris, cui valde affinis, sed humilior et partibus omnibus minor ; pilis laminæ folii albidis calycibusque glaberrimis differt.

3. Hemiphues *tridentata ;* dense cæspitosa, pilis albidis hirsuta, foliis petiolatis spathulatis obtuse 3-dentatis, scapis folio brevioribus, involucri foliolis subacutis, calycis lobis 2-4 inæqualibus glaberrimis.

Hab. Mount Fatigue, with the former ; *Gunn.*

Folia ⅓ unc. longa, coriacea, siccitate atro-brunnea, angustiora quam precedentibus, obtuse tridentata v. apice subtriloba. *Calycis lobi* valde inæquales.

4. Hemiphues *suffocata ;* densissime cæspitosa, foliis parvis ovato-spathulatis petiolatis integerrimis glabratis junioribus pilis albidis sericeis lanatis, scapo brevissimo, capitulo parvo, calycis margine obsoleto integerrimo.

Hab. Mount Fatigue ; *Gunn.*

Folia coriacea, ¼ unc. longa, juniora petioli scapique pilis elongatis albidis sericeis tecta. *Fructus* castaneus, ad basin stylopodii contractus.

1. Oreomyrrhis *sessiliflora,* n. sp. ; laxe pilosa, foliis pinnatis, pinnis ovato-oblongis pinnatifidis pilosis glabratisve segmentis linearibus lanceolatisve acuminatis integris lobatisve, scapis simplicibus monocephalis v. subcomposito-umbellatis, involucri foliolis lineari-oblongis basi coalitis, floribus sessilibus, fructibus brevissime pedicellatis lineari-elongatis glabris.

Hab. Summit of Ben Lomond and Western Mountains ; *Gunn.*

Ob fructum elongatum sessilem facile ab congeneribus distinguenda.

2. Oreomyrrhis *ciliata,* n. sp. ; glabriuscula, foliis linearibus pinnatis, pinnis æqualibus multijugis ovatis lineari-ova-

tisve inciso-pinnatifidis, segmentis acutis utrinque glabris marginibus ciliatis, scapo superne piloso pilis retrorsis, umbella simplici, involucri foliolis brevibus ovatis subacutis ciliatis, pedicellis elongatis pilosis, fructibus ovato-cordatis glaberrimis.

Hab. Arthur's Lakes and St. Patrick's River; *Gunn.*

Ab congeneribus Tasmanicis differt foliis linearibus, pinnis multijugis, marginibus pinnularum involucrique foliorum cartilagineis ciliatis.

CRASSULACEÆ.

1. Tillæa *purpurata*, n. sp.; caulibus suberectis e basi ditrichotome ramosis, foliis anguste lanceolatis acuminatis, floribus breviter pedicellatis solitariis axillaribus terminalibusque tetrameris pentamerisque, sepalis basi connatis, petalis brevioribus obtusiusculis marginibus glaberrimis, fructibus pedicellatis.

Hab. Formosa, abundant in marshes; *Gunn.*

T. *macranthæ* simillima sed laxius ramosa, foliis angustioribus, acuminatis, floribus minoribus, sepalis petalis brevioribus glaberrimisque differt.

1. Bulliarda *recurva.* Tillæa verticillaris, *Hook. Ic. Plant. t.* 295.

Hab. Inundated places, common; *Gunn. :—v. v. n.*

PORTULACEÆ.

Nov. Gen. Liparophyllum, *Hook. fil.—Sepala* plerumque 5, lanceolato-subulata, basi connata. *Petala* 5, subæqualia, basi connata, lineari-oblonga, membranaceo-alata trinervia, supra medium ad nervos incrassata. *Stamina* 5, petalis inserta, iis alterna. *Ovarium* ampullaceum-1-loculare; stylo brevi; stigmate bifido; ovulis plurimis placentis 2 parietalibus affixis. *Fructus* utriculus subcarnosus, polyspermus. *Semina* orbiculata, compressa, fulva, testa subcrustacea minutissime punctulata.—Herba *pusilla, carnosa;* rhizomate *repente, fibras simplices,* *validas, elongatas emittente.* Folia *carnosa, lineari-elongata, obtusa, interdum superne paulo dilatata.* Scapus *solitarius, uniflorus, foliis brevior, nudus.* Flores *pro planta majusculi.*

1. Liparophyllum *Gunnii.*

Hab. Arthur's Lakes, Lake St. Clair, in wet sand; *Gunn.*

Rhizoma crassitie pennæ anatinæ, 3-5-unciale. *Folia* omnia radicalia, patentia, 1-2-uncialia, sub 1½ lin. lata, basi albida dilatata vaginantia, crassa et carnosa, viridia. *Pedunculus* (seu scapus) validus, erectus, teres. *Sepala* carnosa, acuminata, uninervia. *Petala* nunc ad mediam fere coalita, subæqualia, albida, versus apices obtusos carnosa, nervisque carnosis superne incrassatis instructa, supra mediam utrinque alata, alis angustis membranaceis subplicatis. *Staminum filamenta* brevia; antheræ breves, oblongæ. *Discus* carnosus, inconspicuus. *Placentæ* e basi ad apicem utriculi fere continuæ, oppositæ, sub 10-ovulatæ.

CUCURBITACEÆ.

1. Sicyos *Fretensis,* n. sp.; caule sparse piloso v. glabrato, cirrhis trifidis basi petiolisque pilosis, foliis membranaceis reniformi-rotundatis profunde cordatis (sinu late lunato) 7-lobatis lobis triangulatis acutis irregulariter serratis lateralium apicibus conniventibus super punctis sparsis puberulis subter precipue ad nodos pubescenti-pilosis, pedunculis petiolo brevioribus pubescentibus superne glandulosis, masculis racemoso-capitatis longe pedunculatis, ovario setis retrorsum hispidulo.

Hab. Sisters' Island, E. Coast of Flinders Island (Bass' Straits); *Gunn.*

Caules 2-3-pedales, crassitie pennæ anatinæ et ultra, ad nodos precipue pilosi. *Petioli* unciales. *Folia* sub 2 unc. lata, lobo intermedio nunc producto longe acuminato, precipue versus petiolum et ad basin nervorum pilosa, pilis membranaceis subscariosis. *Capitula mascula* 6-8-flora; floribus pedicellatis, ½ unc. diametr.; pedicellis 2-3 lin.

longis, pubescentibus, pilisque apice glanduloso-capitatellatis. *Capitula fœminea* breviter pedunculata, setis $\frac{1}{8}$ unc. longis.

S. *australi* (Novæ Zelandiæ) proxima: an vere diversa?

Halorageæ.

1. Myriophyllum *pedunculatum*, n. sp.; parvulum, dioicum v. (rarius) monoicum, foliis oppositis v. ternis linearibus subacutis integerrimis, fl. masc. longe pedunculatis, pedunculo basi bibracteato, sepalis ovatis apice irregulariter dentatis, petalis lineari-elongatis cymbiformibus, staminibus 8, fl. fœm. carpellis subsessilibus in stylos recurvos longe plumoso-stigmatiferos desinentibus maturis tuberculatis.

Hab. Margins of rivers and pools, abundant.

Caules 2-3-unciales, basi ramosi. *Folia* sub $\frac{1}{2}$ unc. longa, $\frac{1}{2}$ lin. lata. *Fl. masc.* primum sessiles, demum elongato-pedicellati, rufi; fœminei minimi. *Carpella* parva, breviter pedunculata.

Myriophylleæ.

Nov. Gen. Pelonastes, *Hook. fil.*—*Flores* monoici, bibracteolati, *masculi* terminales, solitarii v. pauci, aggregati. *Sepala* 4, concava. *Petala* nulla. *Stamina* 2 v. 4, antheris breviter oblongis. *Fl. fœm.* axillares. *Calycis tubus* ovario accretus, limbus nullus. *Carpella* 4, apice glanduloso-stigmatifera, ad medium coadunata, deinde libera; cætera ut in *Myriophyllo*.—Herbæ *Australasicæ, pusillæ, subcarnosæ, aquaticæ, glaberrimæ.* Folia *undique alterna, linearia.* Flores *minimi*; fœminei *plurimi, solitarii, inserta, axillares*; masculi *pauci, terminales, omnes breviter pedicellati.*

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* A similar, but very distinct, species is contained in Mr. Drummond's Swan River collections, which may be thus characterized.

2. Pelonastes *tuberculata*; foliis integerrimis marginibusve lobulatis, carpellis verruculatis, sepalis apice eroso-dentatis, staminibus 4

Hab. Swan River; *Drummond* (*n.* 18).

*1. Pelonastes *integrifolia;* foliis integerrimis inferioribus elongatis acuminatis, sepalis integerrimis, carpellis lævibus, staminibus 2.

Hab. Muddy places in McQuarrie River; *Gunn.*

Herba pusilla, 1-2-uncialis, parce ramosa, caule basi crassiusculo. *Folia* inferiora ½-1 unc. longa, anguste linearia, superiora breviora.

1. Haloragis *elata,* n. sp.; erecta, ramosa, hispido-scaberula, foliis brevissime petiolatis ovatis acutis grosse argute serratis utrinque scabridis, racemis foliosis, calycis segmentis ovatis acutis petalis linearibus quadruplo brevioribus, fructibus subglobosis pallidis 8-costatis undulato-tuberculatis punctulatis.

Hab. Abundant in dry and shaded places:—*v. v. n.*

Caulis bi-tri-pedalis, erectus, rigidus, scabridus, superne ramisque pilis patulis hispidus. *Folia* ¼-¾ unc. longa, ovata, subsessilia v. brevissime petiolata. *Flores* ad apices ramulorum in racemos foliosos dispositi, dioici? petalis ⅛ unc. longis. *Fructus* parvus, pallidus, vix vernicosus, rugosus.

2. Haloragis *montana,* n. sp.; caule basi suffruticoso divaricatim di-trichotome ramoso, ramis suberectis parce strigoso-subhispidis, foliis coriaceis sessilibus ovatis subacutis serratis utrinque glaberrimis, floribus subelongato-spicatis sessilibus, petalis breviusculis, fructibus globosis 8-striatis verrucosis.

Hab. Summit of Western Mountains, and at Arthur's Lakes; *Gunn.*

Caules basi nudi, superne ramique foliosi. *Folia* uniformia, patula v. recurva, late ovata, coriacea sed non rigida nec aspera, ⅓ unc. longa, pallide viridia, subsessilia. *Spicæ* floriferæ densæ, foliosæ; fructiferæ elongatæ, 1-2-unciales, validæ, erectæ; foliis floralibus fructu parum longioribus v. æquilongis. *Fructus* sub- ½ lin. longus.

ONAGRARIEÆ.

1. Œnothera *Tasmanica,* n. sp.; caule procumbente vage

ramoso puberulo, ramulis prostratis ascendentibus, foliis oppositis alternisque sessilibus lineari-oblongis obtusis margine crispato-dentatis glaberrimis, floribus axillaribus solitariis, antheris breviter oblongis, stigmate elavato, capsula cylindraceo-tetragona valvis linearibus, seminibus alatis.

HAB. Marlborough; *Gunn.*

Species humilis, exemplaribus chilensibus *Œ. dentatæ* habitu simillima. *Rami* 3-5-unciales, graciles. *Folia* ½-⅔ poll. longa. *Capsulæ* puberulæ, subvalidæ, lineari-oblongæ, foliis longiores, sessiles. *Flores* purpurei.

ROSACEÆ.

1. Acæna (Ancistrum) *montana*, n. sp.; pumila glabrata, caule ascendente breviusculo, ramis brevibus, foliolis parvis 5-7-jugis oblique obovato-v. oblongo-rotundatis coriaceis, super reticulato-venosis glaberrimis subter ad costam marginibusque grosse serratis sericeo-ciliatis, pedunculo superne subsericeo, capitulis globosis, floribus parvis, calyce glaberrimo tetragono rhombiformi, aristis brevibus apice glochidiatis medio calycis insertis, petalis distinctis apice conico calycis sitis, staminibus 2, stigmate depresso patelliformi marginibus fimbriatis.

HAB. Summit of Mount Wellington; *Gunn:—v. v. n.*

Folia 1-1½ unc. longa, patula, subcoriacea, petiolis sparse appresse sericeis, foliolis sessilibus, ¼ unc. longis, fere æquilatis, apice subtruncatis, superioribus basi lata adnatis.

MYRTACEÆ.

1. Melaleuca *pustulata*, n. sp.; ramis glabris albo-striatis, ramulis puberulis, foliis glaucis alternis sub-approximatis erecto-patentibus subrecurvis crassis glaberrimis lineari-obovatis anguste linearibusve obtusis supra planis subter concavis punctato-tuberculatis, capitulis flavis terminalibus sessilibus plurifloris sphæricis, hypanthio breviter villoso, calycibus glaberrimis lobis subherbaceis, phalangiis staminum 5.

HAB. Campbell Town and Oyster Bay; *Gunn.*

Rami graciles, lineis e basi petiolorum continuis albidis striati, ramulis puberulis. *Folia* ¼-⅓ unc. longa, sub 1 lin. lata, in petiolum brevem angustata. *Capitula* vix ½ unc. diametr. *Flores* parvi.

1. Eucalyptus *Risdoni*, n. sp.; foliis oppositis ovato-cordatis acuminatis sessilibus v. basi lata connatis junioribus ramulis alabastrisque pulvereo-glaucescentibus, pedicellis axillaribus 6-10-floris, alabastris breviter clavatis, operculo depresso hemispherico umbone nullo, capsula breviter pedicellata obconica rotundata, ore paulo contracto margine plano latiusculo valvis inclusis.

HAB. Risdon, on the Derwent; *Gunn.: v. v. n.*

Arbor 20-pedalis, e basi ramosus, aspectu glaucescente, ramis patentibus divaricatis, ramulis gracilibus, cortice lævi. *Folia* 1½-2 uncialia, rigida, acuminata, latiora quam longa, obtusa cum mucrone. *Pedunculi* ½-¾ unciales. *Alabastra* ¼-⅓ unc. longa. *Capsulæ* ⅓ unc. longæ, extus læves v. paulo rugosæ, nitidæ.

2. Eucalyptus *urnigera*, n. sp.; foliis ovatis v. lineari-ovatis rectis v. curvatis utrinque angustatis plerisque in petiolum sublongum attenuatis, pedunculis subelongatis trifloris, alabastris cylindraceo-urceolatis pedicellatis cupula depresso hemispherica latiuscula umbonata v. mamillata, fructu lignoso urceolato lævi infra orem crassum valde constricto.

HAB. Mount Wellington and Lake Echo; *Gunn.:—v. v. n.*

Arbor statura variabilis, ad cacumina montium arbuscula, in convallibus montosis arbor 20-pedalis v. procerior evadit. *Ramuli* exempl. alpestribus rugosi, nudi, rufescentes, procerioribus læves, glauci. *Folia* 1½-4 unc. longa, bis ad quater longiora quam lata, coriacea, plerumque nitida. *Alabastra* ⅓ ad ¾ unc. longa, plerumque plus minusve urceolata. *Fructus* ½-1 unc. longus, elongatus v. rarius globosus, semper infra orem dilatatum contractus.

3. Eucalyptus *coccifera*, n. sp.; ramis ramulisque teretibus

lævibus plerumque glaucis, foliis alternis parvis uniformibus lineari-ellipticis lanceolatis v. anguste ovatis acuminatis utrinque attenuatis apicibus juniorum uncinato-hamatis, pedunculis brevibus 3-floris rarissime 4-8-floris, alabastris ancipiti-compressis obovato-obconicis, operculo depresso apice concavo capsula latiore rugoso, capsula obconico-hemispherica latiore quam longa basin versus bicarinata brevissime pedicellata, pedicello compresso, ore plano dilatato rarius convexiusculo v. concavo, valvis axi capsulæ parvis.

HAB. Tops of mountains: *Lawrence*, *Gunn*. :—*v. v. n.*

Arbor parva, 10-pedalis, e basi ramosa. *Folia* coriacea, sublonge petiolata, petiolo ½ unc. longo, lamina 1½-2½ unc. longa, ½-1 unc. lata, elliptico-ovata v. lanceolata, v. lineari-lanceolata, omnia 1-nervia. *Pedunculi* breves, fere omnes 3-flori. *Alabastra* longitudine et diametro varia, longiora ½ uncialia, obovato-obconica, pedicellata, breviora ¼ unc. longa, sessilia, breviter obconica, omnia compressa. *Capsulæ* ⅓-½ unc. latæ, utrinque carinatæ, carinæ cum angulis pedicelli continuæ, nunc ad orem capsulæ productæ, nunc supra basin evanidæ.

4. Eucalyptus *vernicosa*, n. sp.; ramis validis, ramulis acute angulatis, foliis alternis parvis uniformibus breviter petiolatis crasse coriaceis late elliptico-oblongis utrinque obtusis mucronulatis nitidis vernicosis, pedunculis brevissimis 1-3-floris, alabastris sessilibus late obconicis, operculis cupulam subæquantibus conico-hemisphericis subrostellatis, capsulis hemisphericis ore non contracto plano v. depresso.

HAB. Mount Fatigue, altitude 4000 feet; *Gunn*.

Arbor parva, 4-pedalis, in convallibus 15-pedalis. *Rami* erecti, robusti, rugulosi, cicatricati; ramulis plerumque tetragonis, angulis acutis. *Folia* breviter petiolata, petiolo ¼ unc. longo, lamina uncialis, ⅔-¾ unc. lata, valde rigida, coriacea, apice rotundata apiculata, sicca flavido-virescentia nitida, obscure nervosa. *Pedunculi* brevissimi, crassi, vix ⅙ unc.

longi, v. sub-nulli. *Alabastra* ⅓ unc. longa, sicca rugosa. *Capsula* ⅓ unc. longa, ad orem æquilata, obconico-hemispherica.

5. Eucalyptus *gigantea,* n. sp.; ramis ramulisque lævibus elongatis gracilibus, foliis alternis sublonge petiolatis amplis oblique curvatis ovato-lanceolatis longe acuminatis basi valde inæqualibus costa distincta, nervis lateralibus divergentibus, pedicellis elongatis multifloris, alabastris lineari-clavatis obtusis, cupulis (florentibus) obconicis pedicellatis, operculo breviter hemispherico obtuso v. subacuto maturo cupula æquilata breviore, capsula majuscula pedicellata obconico-hemispherica v. turbinata ore paulo contracto v. subglobosa ore valde contracto.—"*Stringy-bark*" colonorum.

HAB. Throughout Tasmania, very abundant:—*v. v. n.*

Arbor excelsa, 150-250-pedalis, trunco basi num 20-26-ped. diametr. *Rami ramulique* graciles, elongati. *Folia* 4-6 unc. longa, 1-2½ unc. lata. *Alabastra* angusta, elongata, cupula bis-terve longiora.

(*To be continued*).

DECADES OF FUNGI; *by the* REV. M. J. BERKELEY, M.A., F.L.S.

(TABS. XVII.—XX.)

(*Continued from Page* 326.)

DEC. XV.—XIX. CEYLON FUNGI.

The following Fungi were kindly sent from Ceylon by Mr. G. Gardner, the greater part of the fleshy species and some of a firmer texture being accompanied with characteristic drawings, which have been most serviceable in describing the new forms. A few species, not including the cosmopolites, are common to Ceylon, with Java and the Philippines, and a few other identical with, or very near to some Cuba species; but the number of new species is

considerable, and as the collection contains scarcely any of König's species, who was principally in a different part of the island from what Mr. Gardner has visited, we may expect a rich harvest of additional forms, when the whole island shall be explored. Though the collection is rich in species, there is only one new genus in the collection; but that most interesting and curious. The fleshy Fungi, as is usual, are often identical with European forms, but there are many, especially of the sub-genus *Lepiota,* which are distinct.

*Agaricus *procerus,* Scop. Carn. 418. Gardner, n. 99.

On the ground in shady places. Peradenia, Ceylon. Sept. 1844.

141. A. (Lepiota) *continuus,* n. sp.; pileo membranaceo e campanulato convexo, obtuso candido; epidermide unita glabra; margine crenato sulcato; stipite deorsum incrassato pulverulento, lamellis remotis postice subreticulatis. Gardn. n. 29.

On the ground in shady places. Peradenia, Ceylon. June 1844.

Pileus nearly 4 inches across at first campanulate with the apex flat, then convex and umbonate with the margin membranaceous crenate and sulcate. Cuticle smooth, white, not at all cracked.

Stem 5 inches high, ⅓ of an inch thick, pallid, incrassated downwards, pulverulent; ring, if present, extremely fugacious gills, white remote rather distant reticulated behind.

Distinguished from its allies by its perfectly smooth continuous cuticle, and the gills which are reticulated behind.

142. A. (Lepiota) *Zeylanicus,* n. sp.; pileo subcarnoso campanulato umbonato: epidermide ad medium diffracta; margine striato; stipite æquali farcto glabro radicante; annulo angusto patulo; lamellis latis ventricosis remotis.—Gardn. n. 15.

In shady places on the ground. Peradenia. June, 1844.

Pileus above 3 inches broad, subcarnose campanulate, detailed work on Italian Muscology, of a Flora of Capraia, &c., has very much enlarged and improved the collection in the botanical garden: he is forming a general herbarium and actively investigating the Flora of Liguria, where there is probably much to correct or to verify, and something to add. Besides him, Dr. Casaretto is at present a resident at Genoa. His herbarium contains, in addition to Italian plants and collections made by him during a visit to the Crimea, a considerable number of Brazilian plants from the provinces of Rio Janeiro and Minas Geraes, with a few from S. Paul, the result of his voyage to Brazil eight years since, at the time Guillemin was there. His own specimens are very good, and botanically selected; there being a much greater proportion in fruit than we usually see; and he also procured many specimens from Riedel and Claussen. Dr. Casaretto has also a botanical library, chiefly in reference to Brazilian botany, and has published a Century of his plants of that country, under the title of "Novarum Stirpium Brasiliensium Decades." Unfortunately there is no good general botanical library at Genoa; and many of his species are repetitions of some, previously published in English or German periodicals, or in other works not specially relating to Brazil. Thus, among the few I had time to look over, *Stemodia cruciflora*, Casar. is S. *trifoliata*, Reichb.: *Schwenkia breviseta* and S. *longiseta*, having been here published before the tenth volume of the Prodromus, have the priority over the names there adopted; unless the S. *longiseta* prove to be the S. *Brasiliensis*. *Clelia ornata*, Casar., published as a new genus of *Mimoseæ*, is *Calliandra cylindrocarpa*, Benth. Syn. Mim.: *Chrysoxylon Vinhatico*, Casar., of which the specimens are in fruit only, also considered a new genus, must remain doubtful till its flowers are known: the pod is exactly that of *Plathymenia*, Benth.; but the foliage appeared to me somewhat different; and I had no means of comparison. *Lupinus chrysomelas* appeared to be one of those described in the Annals of Natural History in the enumeration of Schomburgk's plants, but not taken up by Walpers; so that I could not ascertain the point. *Gallesia Scorodendrum* is perhaps, as a genus, not sufficiently distinct from *Seguieria.* Dr. Casaretto's herbarium is ultimately to be incorporated with that of the University of Turin.

This Turin herbarium, deposited at the botanical garden, under the care of Professor Moris, assisted by Dr. Delponte, consists at present chiefly of the late Professor Balbis' collections, partly made by himself in Italy, or in gardens, and partly obtained from various European correspondents, with the valuable addition of Bertero's West Indian, Portorico and Santa Martha herbaria. Many of these plants are the original specimens described by De Candolle in the Prodromus, and by Sprengel in his Systema, and are important for aiding the too short diagnoses of the first volumes of the Prodromus, and explaining the riddles bequeathed to botanists by Sprengel in his Systema. The Turin herbarium has also obtained a few collections lately by purchase; and when it shall further have received Casaretto's herbarium, and Moris' rich Sardinian and Italian collections, it will assume a respectable rank. There is no library at present attached to it; but Moris has a very fair private botanical library, especially in works connected with the Mediterranean Flora.

Botanical Excursion to MOUNT OLYMPUS, *in Van Diemen's Land; by* R. GUNN, ESQ.

Mr. Gunn's name is familiar to our readers as a most active and intelligent botanist of Van Diemen's Land; but the extent of his discoveries in that interesting country cannot be fully appreciated till the catalogue of new species shall appear in this Journal, to be followed by the "*Flora Tasmanica,* of the Voyage of the Erebus and Terror." We give the following extract of a letter, addressed to Dr. Joseph Hooker, and dated nature of the downy coat, fugacious ring, and the bright coloured gills. It is also a smaller species.

146. A. (Armillaria) *eurrhizus*, n. sp.; pileo carnoso e subconico expanso fortiter umbonato cute gelatinosa rugosa vestito; stipite sursum attenuato extus cartilagineo; radice fusiformi; annulo e strato externo orto evanescente; lamellis adnexis albis.—*Gardner*, n. 43.

Peradenia, Ceylon. On the ground, eaten by the Cingluse. June, 1844.

Pileus at first subconical, then expanded, 3½ inches across, strongly umbonate, fleshy, covered with a rugose gelatinous coat; umbo brown, shaded off into dirty white; margin somewhat crenate.

Stem 2 inches high, ½ an inch thick in the centre, clothed with a cartilaginous coat attenuated upward, sending down a strong fusiform root into the soil 3 inches long.

Ring continued from the outer coat visible only in young specimens.

Gills arcuate, white, adnexed.

Allied to *Agaricus mucidus*, with precisely the habit and appearance of Ag. *radicatus*.

147. A. (Tricholoma) *crassus*, n. sp.; maximus valde carnosus pileo convexo obtusissimo glabro luteo-fusco; margine sinuato-plicato; stipite valido solido pallido; lamellis albis adnexis primitus postice sinuatis.—*Gardner*, n. 53.

On the ground in shady places. Peradenia, Ceylon. June, 1844.

Pileus 8 inches across, very fleshy, obtuse, smooth, sometimes minutely cracked, sometimes splitting longitudinally, yellow-brown; coarsely plicate towards the margin which is involute.

Stem 6 inches high, 1½ inch thick, swollen at the base, nearly smooth, dirty white, slightly spotted.

Gills crowded, not very broad, adnexed, at first slightly sinuated, white.

Allied to Ag. *colossus*, *geminus* and *tumidus*; a most magnificent species.

*A. *nudus, Bull. t.* 439. *Gardner*, n. 31.

In damp shady places on the ground. Peradenia, Ceylon. June, 1844.

The Ceylon specimens are mostly umbonate.

*A. *homotrichus, Berk. in Hook. Lond. Journ. of Bot., Vol.* 2, *p.* 410.—*Gardner*, n. 10.

Growing on roots of plants. Peradenia, Ceylon. May, 1844.

The Ceylon specimens are exactly the plant of Uitenhage. It appears from the drawing that the pileus is greyish when fresh, and the gills purplish.

*A. *umbelliferus, L. Gardner*, n. 37, et (monstrosus) n. 35.

On the ground. Hautane Range, Ceylon. June, 1844, and n. 35 on old wood.

The specimens are robust and highly cæspitose, but differ in no assignable character from the European species; n. 35 is a curious state in which the stems are confluent, and form one solid mass.

*A. *dryinus, P. Gardner*, n. 88. Ceylon.

Of this I have seen no specimen, but the drawing exactly accords with A. *dryinus*.

148. A. (Pleurotus) *versiformis*, n. sp.; hygrophanus albus; pileo membranaceo ex integro umbilicato spathulato; stipite brevi glabro; lamellis latiusculis postice attenuatis decurrentibus interstitiis rugulosis.

In forests on mossy branches. Talagalla. Feb. 1846.

Varying extremely in form, entire and umbilicate, infundibuliform, flabelliform, spathulate, or almost linear, hygrophanous thin and membranaceous.

Stem short, smooth, or rarely (as also the base of the pileus) sprinkled with a few strigose fascicles, grooved and cartilaginous when dry.

Gills moderately broad, attenuated behind, and very decurrent.

Interstices slightly wrinkled.

Resembling A. *petalodes*, but not very closely allied. Its position will be next to A. *mutilus*, with which it agrees in its very variable form.

149. A. (Pleurotus) *testudo*, n. sp.; densissime imbricatus; pileis vertice porrectis lobatis griseis subtiliter tomentosis, pellicula gelatinosa vestitis; lamellis ochraceis. *Gardner*, n. 41.

On old wood. Hautane, Ceylon. June, 1844.

Densely imbricated 1-2 inches across, laterally confluent subflabelliform, in consequence of the vertex being elongated; cuticle gelatinous, but not viscid, grey, clothed with short down: margin not striate.

Gills narrow, ochraceous, attenuated behind, clothed with minute bristles.

Resembling A. *spiculiferus* in the velvety gills; but I cannot point out any species to which it is very closely allied. It is not recupinate in any stage of growth, and therefore must be placed in Fries' second section of Pleurotus.

*A. *pluteus, Batsch. Gardner*, n. 22, 98.

On the ground. Hautane, Ceylon. June, Sept. 1844.

*A. *phlebophorus, Ditmar. Gardner*, n. 46.

On old wood. Hautane, Ceylon. June, 1844.

The pileus is rather paler than is usual in European specimens.

150. A. (Flammula) *holocrocinus*, n. sp.; cæspitosus croceus; pileis convexis carnosulis furfuraceo-sericeis centro glabrescentibus; stipitibus solidis; lamellis angustis decurrentibus.

On dead wood. Ambegamoa, Ceylon. Feb. 1846.

Cæspitose. Pilei 1-2 inches broad, slightly fleshy, convex, bright tawny yellow, as is the whole of the plant, at length naked in the centre; margin involute when dry, permanently furfuraceous.

Stem 1-½ an inch high, varying greatly in thickness, fibrillose, solid.

Gills narrow, crowded, shortly decurrent, of a rich tawny yellow.

Spores minute, tawney, broadly cymbiform.

This species has exactly the habit of A. *fascicularis*, but has the spores of the fourth section of Fries' division, Flammula, from all the species of which it differs in its narrow slightly decurrent gills.

*A. *cerodes, Fr. Ep. p*. 195. *Gardner*, n. 7, 12.

On the ground. Peradenia, Ceylon. May. 1844.

N. 6 belongs to the same section, but the specimens are unfortunately so decayed, that I cannot ascertain the form and mode of attachment of the gills.

*A. *pediades, Fr. Ep. p*. 197.

On the ground in open places. Peradenia, Ceylon. With A. *campestris*, n. 19; n. 20 is apparently a long-stemmed form of the same species.

*A. *siligineus, Fr. Ep. p*. 205. *Gardner*, n. 40.

On fallen flowers of *Caryota ureus*. Peradenia, Ceylon. June, 1844.

151. A. (Crepidotus) *hepatizon*, n. sp.; pileo umbilicato excentrico versiformi glaberrimo hepatico; stipite cartilagineo compresso lamellis fragilibus laceratis decurrentibus concoloribus.—*Gardner*, n. 52.

Hautane Range, Ceylon. On old wood. June, 1844.

Pileus 1½ inch broad, umbilicate, eccentric, sometimes nearly stemless, smooth, liver-coloured.

Stem 1 inch high, ¼ thick, cartilaginous compressed, of the same colour as the pileus, sending out a few roots at the base.

Gills much torn, paler than the pileus.

Spores minute, ferruginous.

A very distinct species resembling rather some of the eccentric *Pleuroti* than any in its own group.

152. A. (Crepidotus) *phæophyllus*, n. sp.; pileis imbricatis porrectis obovato-cuneatis albidis subsquamulosis; lamellis fusco-purpureis.—*Gardner*, n. 36.

On old wood. Hautane Range, Ceylon. June, 1844.

Densely imbricated; pilei 1 inch long, ¾ of an inch broad, obovato-cuneate, dirty white, with a few indistinct transverse scales which are not visible in the dried specimens.

Stems none.

Gill moderately broad, purple brown.

Spores purple brown.

This species has somewhat the habit of *Paxillus Panuoides*, but it is a true *Agaricus* distinguished from its allies in the section *Crepidotus*, by purple brown gills and spores.

153. A. (Psalliota) *trachodes*, n. sp.; pileo carnoso e convexo expanso demum depresso verrucoso interstitiis sericeis; stipite sursum attenuato farcto albo; annulo amplissimo deflexo; lamellis angustis subliberis pallidis demum fuscis.—*Gardner*, n. 64.

On the ground in shady places. Peradenia, Ceylon. July, 1844.

Pileus 4½ inches broad, pale reddish brown, at first convex, then expanded and depressed, thick and fleshy; epidermis broken up into warty scales, interstices silky.

Stem 4 inches high, nearly ¾ of an inch thick in the middle, attenuated upwards, stuffed with loose fibres, at length hollow, white, sometimes quite obtuse, sometimes rooting.

Ring an inch broad, deflexed, fugacious.

Gills narrow, slightly adnexed, pale yellowish white, at length brown.

Spores obliquely ovate.

Nearly allied to A. *cretaceus*, but with the pileus warty. The stem is not the least sunk into the flesh. It has quite the appearance of a *Lepiota*.

154. A. (Psalliota) *simulans*, n. sp.; amplus pileo carnoso hemispherico piloso-squamoso centro glabro; margine crenato; stipite valido sursum attenuato fibrilloso; annulo lacerato fugaci; lamellis approximatis angustis liberis primum candidis.—*Gardner*, n. 79.

On the ground. Peradenia, Ceylon. August, 1844.

Pileus 5½ broad, fleshy, hemispherical, obtuse, smooth, and umber-brown in the centre, beyond which it is clothed with small pilose scales.

Stem 4 inches high, ¾ of an inch thick in the centre, attenuated upwards from the obtuse base, white, solid fibrillose.

Ring near the top of the stem torn, fugacious.

Gills for a long time white, scarcely more than 1 line broad, attenuated behind, not ventricose, at length dark from the spores.

Distinguished by its narrow white gills from A. *campestris*, and in its whole habit from A. *arvensis*. From A. *cretaceus* it is essentially distinguished by its stem not penetrating the substance of the pileus, and consequently in its gills not being remote, and in its solid stem.

*A. *silvaticus, Schæff. t.* 242.—*Gardner*, n. 28.

On the ground. Peradenia, Ceylon. June, 1844.

*A. *arvensis, Schæff. t.* 310.—*Gardner*, n. 27.

On the ground in woods. Hautane, Ceylon. June, 1844.

*A. *campestris, L.*—*Gardner*, n. 19.

On the ground in open places. Peradenia, Ceylon. June, 1844.

Another state occurred with a rather different habit marked n. 48; but I believe not distinct.

155. A. (Psalliota) *rufo-albus*, n. sp.; pileo carnosulo subviscoso albido centro depresso rufescente; stipite tenui bulboso sursum candido, infra annulum integrum patulum rufescente; lamellis ventricosis adnexis atro-fuscis.—*Gardner*, n. 23.

On the ground. Peradenia, Ceylon. June, 1844.

Pileus 1 inch or more broad, expanded more or less, depressed, with occasionally a small umbo, white, shaded off into red-brown in the centre, rather viscid.

Stem about 1 inch high, scarce a line thick, bulbous at the base, white above; below the narrow spreading white ring red-brown.

Gills nearly black, ventricose adnexed.

Allied to A. *melaspermus, Bull.* but not so convex, and differing in the rufous stem, and less fleshy pileus. It has somewhat the appearance of a dwarf smooth state of A. *squamosus.*

*A. *sublateritius, Fr. Ep. p.* 221.—*Gardner*, n. 89.

On old wood. Hautane Range, Ceylon. Aug. 1844.

*A. *fascicularis, Huds.—Gardner*, n. 45.

On the ground in shady places attached to little bits of wood. Peradenia, Ceylon. June, 1844.

A very small state of the species.

*A. *cernuus, Müll.—Gardner*, n. 26.

On the ground, and attached to turgs. Peradenia, Ceylon. June, 1844.

The specimens, it should be observed, have the characters of A. *cernuus*, with the habit of A. *stipatus.*

*A. *papilionaceus, Bull.—Gardner*, n. 4, and n. 54. *var.*

On the ground. Hautane Range, Ceylon. July, 1845.

The specimens appear not to have grown on dung, but on the bare soil.

*A. *campanulatus, L.—Gardner*, n. 2.

On the ground. Peradenia, Ceylon, June, 1844.

*A. *hiascens, Fr.* A. *striatus, Bull. t.* 552. *f. F. G.—Gardner*, n. 25.

On the ground. Peradenia, Ceylon. June, 1844.

In the larger Ceylon specimen, the smooth portion above the furrows is tesselated from the cracking of the cuticle.

*A. *disseminatus, P.—Gardner*, n. 61.

On old wood. Peradenia, Ceylon. July, 1844.

*Hygrophorus *obrusseus, Fr. Ep. p.* 331.—*Gardner*, n. 70.

On the ground in woods. Ceylon. July, 1844.

N. 71 appears to be a nearly allied pure white species, which is eaten by the natives. The specimens are unfortunately too much injured by mites to allow me to determine them accurately.

*Russula *emetica, Fr. Ep. p.* 357.—*Gardner*, n. 87.

On the ground. Hautane, Ceylon. Aug. 1844.

156. Marasmius *sulciceps*, n. sp.; pileo membranaceo depresso umbilicato rufo-pallescente e centro sulcato; stipite compresso cartilagineo velutino-pruinoso basi substrigoso; lamellis ventricosis secedenti-liberis rufis; sporis ferrugineo-ochraceis.—*Gardner*, n. 38.

On old wood. Hautane, Ceylon. June, 1844.

Pileus umbilicate, depressed, rufous becoming pallid, strongly sulcate almost from the centre.

Stem compressed, externally cartilaginous substrigose at the base, then velvety, pruinose at the apex.

Gills ventricose, distant, nearly free, but in very depressed individuals subdecurrent; interstices even.

Spores ochre-red, obliquely ovate, subapiculate.

This species has just the appearance of a small specimen of M. *peronatus*, but has the spores of a *Cortinarius*.

157. M. *fulviceps*, n. sp.; sub-cæspitosus, pileo convexo-plano lævi fulvo-ferrugineo; stipite elongato sub-glabro fulvo; basi fulvo-strigosa; lamellis emarginatis albis.—*Gardner*, n. 73.

On decayed wood, leaves, sticks, &c. Hautane Range, Ceylon. July, 1844.

Pileus ½ an inch or more across, convex, at length plane or depressed, of a beautiful tawny, clothed with a delicate bloom, even, not striate.

Stem thread-like, 2-3 inches high, smooth, or slightly pruinose tawny, like the pileus, fixed at the base by tawny strigose down.

Gills numerous, white, tawny brown when dry, emarginate.

Allied to M. *ferrugineus*, *Berk.*; but more especially to M. *pyrrhocephalus*, from which it differs in its more numerous emarginate gills, smooth stem, and the tawny strigose down at the base.

158. Heliomyces *Leveillianus*, n. sp.; fasciculatus insititius pileo e convexo campanulato umbonato sulcato castaneo; lamellis paucis subconcoloribus adnexis; stipite subfusco fistuloso glabro.—*Gardner*, n. 72.

On decaying wood. Hautane, Ceylon. July, 1844.

Fasciculate. Pileus $\frac{3}{4}$-1 inch broad, at first convex, campanulate, strongly umbonate, smooth, sulcate, of a bright chesnut brown.

Stem filiform, fistulose, smooth, brownish, not shining.

Gills few, slightly ventricose, adnexed, pale chesnut; interstices nearly smooth.

This and the following species are intermediate between *Heliomyces* and *Marasmius*, but with the advice of M. Léveillé I refer them to the former. The present is a very beautiful fungus.

159. H. *caryotæ*, n. sp.; fasciculatus albido-luteus; pileo convexo crenato sulcato umbilicato; stipite fistuloso subglabro; lamellis latis ventricosis adnexis.—*Gardner*, n. 3.

On fallen flowers of *Caryotaurens.* Peradenia, Ceylon. June, 1844.

Pileus 1 inch broad, convex, umbilicate, crenate, sulcate, smooth, pale, dirty yellow, as are the gills and upper part of the stem.

Stem filiform, fistulose nearly smooth, brownish at the base.

Gills broad, ventricose, adnexed, sometimes pressed close to the stem, but not really adnate; interstices nearly even.

This species acquires a brown tint in drying.

*Lentinus *Lecomtei, Fr. Ep. p.* 388.—*Gardner,* n. 1, 13.

On old wood and roots of trees. Kadaganava. Hautane Range, Ceylon. June, 1846.

Pileus when fresh, pallid, gills nearly white.

*L. *strigosus, Fr. Ep. p.* 388.—*Gardner,* n. 18.

On rotten trees on the Hautane Range, Ceylon. June, 1844.

Exactly the Guiana species of Montagne. In the drawing the pileus is represented of a pinkish grey, and the gills white.

*L. *badius, Berk. Panus badius, Berk. in Hook. Lond. Journ. of Bot. Vol.* 1, *p.* 145.—*Gardner,* n. 59.

On wood in forests. Hautane Range, Ceylon. July, 1844.

There is a slight difference between the Ceylon and Philippine plant; but I consider both, notwithstanding, the same species. In the Philippine plant the colour is darker, inclining to brown, the furrows on the pileus more distant, and the stem more or less naked. In the Ceylon fungus the pileus is of a beautiful umber, more closely striate, and the stem clothed with coarse velvety pubescence. The differences in colour, and in the coating of the stem, I believe, arise from age. I think it would be very improper to make two species without an opportunity of examining fresh specimens, and the great changes which take place in this genus in the appearance of the stem, suggest extreme caution in the erection of species. The stem in the drawing is represented as nearly black.

160. L. *revelatus*, n. sp.; confluenti-cæspitosus; pileo depresso crassiusculo e velutino glabrato ochraceo; stipite elongato extus spongioso; lamellis angustis decurrentibus integris.—*Gardner*, n. 117.

On decaying wood. Point de Galle, Ceylon. April, 1844.

Confluenti-cæspitose; pilei unequal 2½ inches across, depressed, flexuous, rather thick, ochraceous, clothed at first with dense velvety down, then naked, but slightly pulverulent not virgate; margin scarcely involute, except in the young plant, when the pileus is infundibuliform.

Stems connate 2½ inches high, nearly ¼ thick, clothed with spongy down, nearly equal, hard, and rigid.

Gills crowded, narrow, entire, decurrent, slightly anastomosing behind.

This very remarkable species is allied to L. *connatus*, *Berk.*; but differs materially in the velvety deciduous clothing of the pileus.

161. L. *subnudus*, n. sp.; pileo subinfundibuliformi furfuraceo-squamoso glabrescente virgato; stipite gracili rigido

deorsum nigrescente; lamellis latiusculis subintegris vix echinulatis decurrentibus distantiusculis.—*Gardner*, n. 116.

On fallen trees. Point de Galle, Ceylon. April, 1844.

Pileus 2 inches or more broad, subinfundibuliform, clothed sparingly with furfuraceous scales, which gradually fall off, and leave the surface nearly naked, but virgate.

Margin scarcely involute.

Stem slender, rigid, black at the base, 1 inch or more high, dilated at the summit.

Gills rather distant, decurrent, slightly forked behind, nearly entire, scarcely at all echinulate.

Nearly allied to L. *crinitus*, *Berk.* (A. *crinitus*, *L.*), which it resembles in the gills, but differs in many essentials.

*L. *pergameneus. Lév. Ann. des Sc. Nat.* 3, *Séc. Vol.* 5, *p.* 117.

On decaying wood. Point de Galle, Ceylon.

There is a species marked n. 107 in Mr. Gardner's collection which is allied to L. *anthocephalus*, *Lév.*; but has broader gills. The specimens are unfortunately too much injured by insects to admit of their being described.

162. L. *giganteus*, n. sp.; maximus, pileo convexo umbrino squamulis depressis saturatioribus maculato; centro crasso; margine primum involuto tenui sulcato pallido; stipite sursum valde incrassato subvelutino solido radicante; lamellis arcuatis subdistantibus integris longe decurrentibus albis. (TAB. XVII. XVIII. *f.* 2).—*Gardner*, n. 58.

On the ground. Hautane Range, Ceylon. July, 1844.

Pileus 8 inches across, at first convex, with the margin strongly involute, at length nearly plane in the centre, then contracted, with the margin slightly expanded; umber-brown, thickly spotted with darker adpressed scales; margin thin, pale, smooth, sulcate.

Stem 3 inches or more high, about an inch thick in the centre, expanded above, solid, pale, rather velvety, rooting.

Gills moderately broad, rather distant, strongly arched, entire.

A most magnificent and curious species allied to L. *descendens, Fr.*

Tab. XVII. XVIII. *f.* 2. L. *giganteus, nat. size.*

163. L. *maculatus,* n. sp.; albidus pileo depresso medio maculato-squamoso, margine tenui repando sulcato; stipite glabro; lamellis albis decurrentibus. (Tab. XIX. *f.* 2).—*Gardner,* n. 39.

On the ground. Hautane, Ceylon.

Cream coloured. Pileus 3½ inches across, depressed in the centre, and marked with brown scale-like spots.

Margin arched, smooth, sulcate.

Stems connate 2 inches high, more than ½ an inch thick, solid, smooth.

Gills rather narrow, arcuate, thin, decurrent, lacerated, with their edge entire.

This species has very much the habit of *Lactarius piperatus.* It is allied to L. *descendens,* and is, I believe, quite distinct from any published species.

Tab. XIX. *f.* 2. *L. maculatus, nat. size.*

164. L. *inconspicuus,* n. sp.; subcæspitosus albidus; pileo coriaceo centro valde depresso virgato; margine involuto furfuraceo-squamoso; stipite brevi ligneo furfuraceo glabrescente; lamellis tenuibus decurrentibus postice leviter anastomosantibus lævibus, denticulatis.

On wood. Talagalla, Ceylon.

Somewhat tufted, dirty white. Pileus 1¾ inch broad, much depressed in the centre, but scarcely infundibuliform, virgate, nearly smooth, margin arched and involute, clothed with furfuraceous minute scales.

Stem ¾ of an inch high, 2 lines thick, hard, furfuraceous, at length smooth.

Gills very thin, slightly anastomosing behind, shortly decurrent, more or less denticulate, not conspicuously scabrous.

This species differs from L. *furfurosus, Mont.,* in its denticulate not dichotomous gills. In other respects, and in habit it nearly resembles the Chili species.

by Montès, who is the pride of Spain and the hero of a hundred bull-fights. At Ronda, this man's name was printed in large red letters, like that of a Lablache or Rubini. His book is full of technical terms and strange details, and the preface contains a justification of the science, which is highly amusing to a foreigner by its *naïveté*.

The following day I went to see the *Capea*, a kind of burlesque which winds up the spectacle, much as a farce or after-piece follows a tragedy. The arena was filled with the crowd, when a number of very young bulls were let loose, who were more inclined to play than mischief. The people teazed the animals and often got themselves rolled in the dust; and the diversion was ended by two gipsy-women, who were intended to parody a real bull-fight. The poor creatures, ready to die of fright, were clad like Amazons and reluctantly hoisted on horses, which were presently attacked by a bull, whose horns were sheathed in large wooden balls. Every time the beast pushed against the horses, the women tumbled off; while the Toréadors, who attended as amateurs, did nothing but laugh at their terror, give them draughts of cold water, and persuade them by coaxing and entreaties to be reseated in the saddles. A third Gitana, whom I verily believe to have been intoxicated with *aguardiente* and who was to have feigned to slay the bull after the fashion of a Matador, was obliged to give up, after being repeatedly and awkwardly unhorsed.

The three Fair-days being over, Ronda was soon quit of its throng of strangers. More to my taste were the solitude and peace of the country, than the bustle which had prevailed. I enjoyed strolling along the *Tajo* and exploring the fissures of the rocks to the north of the town; where the shade and moisture favoured the growth of many plants I had not seen before, as *Hyoseris lucida, Lactuca tenerrima* and several species of *Linaria*. The *Jasminum fruticans, Osyris alba* and *Rhamnus lycioides* graced the inaccessible shelves; while *Ferula glauca* reared every where its gigantic stems, which resemble an immense candelabra. I also discovered here the *Brassica moricandioides*, a fine cruciferous plant, recognizable from afar by its large violet flowers; and the vineyards afforded me several rare species, among them *Arabis parvula.* The valley, full of trees and traversed by innumerable streamlets, was delightfully cool and fresh. Nothing can be more curious than the bridge seen from below, and the gorge whence issues the river. The chinks of the rock, and the masses of *Ivy* which festoon its sides, give shelter to flocks of doves, which mingle their mournful notes with the sounds of the town and rushing of the waters. I was surprized to observe here many of the plants which inhabit the warm rocks of the coast, as *Campanula velutina*, *Linaria villosa* and *Sedum glanduliferum.* It is a remarkable feature in Spanish Botany that the vegetation of the warm region prevails also at considerable elevations; whenever shelter from the wind and exposure to the sun are found. Many striking instances may be seen on the Sierra Nevada.

I had intended, during my sojourn at Ronda, to climb the *Sierra de la Nieve*, which is the loftiest mountain in the country, and only two leagues distant in the direction of Malaga; but a slight illness made me lose some days; and I was compelled to set off for Gibraltar. The morning was rainy, and the moisture, which hung like pearls on every spray, had refreshed the face of the ground. We re-ascended the gentle hills which surround the town, and found ourselves, after an hour and half of walking, at the top; from which we took a last look of Ronda, clinging to the edge of its *Tajo* and all its buildings gilt with the early sun. I had started in company with a large party of *arrièros*, who were returning to the coast; but I soon quitted them, being unwilling to travel at their rapid rate. Among the rocks which divide Ronda from the southern valleys of the *Serrania*, I gathered *Pæonia lobata*, the sweet-scented *Thymus mastichina*, *Genista biflora*, which forms low and dense bushes, *Nepeta Apulei* and the handsome *Echium albicans.* From is a swelling in the stem immediately beyond the termination of the gills, which is not, however, always visible. No. 67, gathered in July, is a lobed and plicate form of the same species.

168. Xerotus *griseus,* n. sp.; fisso-infundibuliformis, lobis spathulatis griseis stipiteque spurio flocculosis; margine repando; plicis decurrentibus albis. Gardner, n. 74.

On old wood, Hautane Range, Ceylon. July, 1844.

Pileus ½ an inch across, ¾ of an inch high, including the stem, essentially infundibuliform, but soon split to the base so as to present slightly flocculose spathulate pilei, with compressed cuneiform stems.

Folds, white, decurrent, sometimes forming mere veins.

Gills white, sometimes almost lamelliform.

Nearly allied to *Cantharellus partitus,* Berk., which must now be moved to the genus Xerotus. It differs in the larger size, the flocculose, more elongated pileus, the arched border, and in the stem not being distinctly velvety. The folds are also more highly developed. The whole structure of the two species is the same.

*Schizophillum *commune,* Fr. Ep. p. 403.—*Gardner,* n. 11.

On rotten wood, Peradenia, Ceylon. June 1844.

*Lenzites *repanda,* Fr. Ep. p. 404.

On dead wood, dense forests at foot of Adam's Peak. Ceylon.

*L. *aspera,* Fr. Ep. *Dædalea aspera,* Kl. in Linn. vol. 8, p. 480.—*Gardner,* n. 83.

On fallen trees, Hautane, Ceylon. Aug. 1844.

Of this there is but a single specimen, which has a short lateral stem, and the margin sulcate. The surface is precisely like that of *Lenzites aspera,* of which I consider it a more highly developed form.

*Polyporus *arcularius,* Fr. P. *agariceus,* Berk. in Ann. and Mag. Nat. Hist. vol. 10, p. 371.—*Gardner,* n. 21.

On old wood, Hautane Range. June 1844. Pedro Talagalla, Ceylon, 8000 feet above the level of the sea.

I formerly considered this as distinct from P. *arcularius* because it did not accord with the characters given by Fries, but as these appear to have been taken from Micheli's figure, and Dr. Montagne's plant from the south of France, (of which I have a specimen,) is referred to P. *arcularius* by Fries himself, I have been induced to alter the opinion I had previously formed.

*P. *oblectans*, Berk. in Hook. Lond. Journ. of Bot. vol. 4. p. 51. *Gardner*, n. 60.

On old wood, Hautane Range. July, 1844.

The Ceylon specimens are rather neater than those from the Swan River, but the colours and sculpture are just the same.

* P. *xanthopus*, Fr. Ep. p. 437. *Gardner*, n. 105.

On stems of decaying trees, Ceylon, Hautane Range. Sept. 1844.

A *Polyporus* (n. 57) occurred at Kadaganava on the ground in open places, July, 1844, which appears to be undescribed, but, unfortunately, is in too imperfect a state to describe. The pileus is lateral, exactly as in P. *longipes*, Léveillé, of which it has just the habit; the stem is incrusted, but not laccate; the pileus dark-brown, scarcely incrusted; pores short, small and round.

*P. *picipes*, Fr. Ep. p. 440.

On sticks. Dense forests at foot of Adam's Peak, Ceylon.

*P. *grammocephalus*, Berk. in Hook. Lond. Journ. of Bot. vol. 1, p. 148. *Gardner*, n. 24.

On old wood. Hautane, Ceylon. June, 1844.

In the drawing, the pileus is nearly white, while in the dried specimens, both from Ceylon and the Philippines, the colour is a pale umber.

*P. *lucidus*, Fr. Ep. p. 442.

On wood. Dense forests at foot of Adam's Peak, Ceylon.

*P. *Amboinensis*, Fr. Ep. l. c.

On wood. Dense forests at foot of Adam's Peak, Ceylon.

The specimen is ungulate, without the slightest trace of a stem.

*P. *sanguineus*, Fr. Gardner, n. 111.

On trunks of fallen trees in woods. Hautane Range. Sept. 1844.

169. P. (Pleuropus) *dilatatus*, n. s.; pileo laterali spathulato tenui coriaceo badio zonato glabrato, stipite longo sursum dilatato furfuraceo luteo; hymenio determinato pallido, poris minutis.

On dead wood. Dense forests at the foot of Adam's Peak, Ceylon.

Pileus 1¼ inch broad, 1½ long, spathulate, or nearly orbicular, depressed behind, and confluent with the stem, at first furfuraceous, at length nearly smooth, shining, minutely virgate, bay-brown, variegated with darker zones.

Stems 1¾ inch long, dilated above, somewhat compressed, furfuraceous, at length smooth above, yellow, somewhat bulbous at the base.

Hymenium determinate; pores minute, angular.

Allied to P. *xanthopus*, and *affinis*, but distinguished by its larger pores and different habit.

*P. *flabelliformis*. Klotzsch in Linnæa, vol. 8, p. 483.

On wood. Talagalla, Ceylon. Feb. 1846.

Varying greatly as regards the length of the stem, which in one specimen is central.

170. P. (Pleuropus) *discipes*, n. sp.; coriaceus, pileo reniformi fulvo nitidulo glabrato leviter zonato hic illic rugoso, plicatove; stipite disciformi; hymenio inæquabili luteo-fusco margine sterili luteo, poris minutis.

On dead wood. Talagalla, Ceylon.

Pileus 1½-2½ inches broad, 1-1½ inch long, reniform, or somewhat cuneate, thin, coriaceous, sometimes laterally confluent, tawny, at first most minutely velvety or pruinose, at length smooth and rather shining, marked with one or two concentric ridges, between which it is repeatedly and finely zoned, often plicate (like Pol. *Auberianus*) or slightly rugged, but sometimes nearly even; margin very acute.

Stem extremely short, disciform.

Hymenium uneven, of a rich yellow-brown; margin barren, yellow; pores minute, not $\frac{1}{100}$th of an inch in diameter, punctiform; dissepiments here and there slightly elongated.

Allied to Pol. *brunneolus,* with somewhat of the aspect of Pol. *cupreus.* It is an extremely elegant species.

*P. *lacteus,* Fr. Ep. p. 453.

On dead wood, base of Adam's Peak, Ceylon.

There are but two specimens, which I refer doubtfully to P. *lacteus,* because I have no type. They belong at any rate to the same group.

171. P. (Anodermei) *secernibilis,* n. sp.; eximie imbricatus postice confluenti-effusus a matrice secernibilis; pileis membranaceo-coriaceis subplicatis sericeis demum glabrescentibus nitidulis pallidis zonis obscurioribus; poris minimis fuligineis.

Talagalla, Ceylon. Feb. 1846.

Effused behind, but separable from the matrix, giving off from the decurrent mass numerous imbricated pilei, which are 1 inch or more long, thin membranaceo-coriaceous, laterally confluent, slightly crisped or plicate, pale, with darker zones, silky, at length smooth and shining; more or less virgate; sometimes, especially behind, the silky covering is raised into little elevated scales.

Pores very minute, angular, dull-brown, shallow but rather deeper than the substance of the pileus.

Very closely allied to P. *adustus* and P. *crispus,* but a neater plant than either, resembling somewhat, at first sight, the true *Thelephora versicolor,* Swartz, but not so highly coloured. The zones vary in intensity.

172. P. (Anodermei) *rubidus,* n. sp.; roseo-gilvus; pileo tenui coriaceo subreniformi sulcato-zonato inæquabili pulverulento sericeo; contextu concolori; poris minimis brevibus punctiformibus. Gardn. 96.

Point de Galle, Ceylon. On fallen trees in woods. Dec. 1844.

Pilei 2 inches or more broad, 1½ inch long, laterally confluent, subreniform or subflabelliform, thin, coriaceous of a delicate rosy grey, uneven, sulcate or zoned, clothed with delicate mealy pubescence. Substance coloured like the pileus.

Pores rosy grey, very minute, but visible to the naked eye, punctiform.

A very elegant species, resembling in colour P. *Feei* and P. *carneus*, but without any distinct cuticle.

P. *carneus*, too, is described as glabrous, which is not the case with the present species, which I should otherwise have been inclined to think a well developed form of the Java Fungus.

*P. *igniarius*, Fr. Ep. p. 466. Gardn. n. 110, var. *applanatus*, pileo tenui applanato sæpe nodoso.

On decaying wood. Hautane, Sept. 1844.

This is a thin variety, which in some conditions, has so little the habit of the normal form as almost to demand the proposition of a new species; but other specimens are ungulate, and quite like the European species.

*P. *Australis*, Fr. Ep. l. c.

Forests at base of Adam's Peak, Ceylon.

*P. *senex*, Nees et Mont. Ann. des Sc. Nat. 2me sér. vol. 5. 70.

On wood and dead branches.

Varying singularly in appearance.

Specimens which have grown rapidly are thin and acute, while those which have been many years growing, become thick, with a remarkably obtuse grooved margin, caused by the successive stages of growth, of which 16 or more may be traced.

173. P. (Placodermei) *holosclerus*, n. sp,; durissimus pileo tenui utrinque plano semiorbiculari rubiginoso acuto plus minus tuberculoso zonato scabriusculo glabrato; hymenio contextuque rhabarbarinis, poris minutissimis angulatis.

Dense forests at foot of Adam's Peak. Ceylon.

Extremely hard and rigid. Pileus 5 inches broad, 3 long, semiorbicular or subreniform thin plane, above and below minutely tuberculate, especially behind, and scabrous, but sometimes nearly even, more or less zoned, at length smooth and shining, rubiginous, margin very acute; substance very hard, rhubarb-yellow.

Hymenium of the same colour with the substance.

Pores very minute, scarcely visible to the naked eye, rhubarb-yellow within, longer than the substance of the pileus.

In some specimens the pileus is effused behind; and in one which is thicker than the rest, three or four fresh strata, each smaller than the preceding, are deposited on the hymenium.

This species is nearly allied to P. *rubiginosus,* Berk., and Pol. *senex,* Nees et Mont. From the former it differs in habit and the smoother pileus, from the latter in its smaller size and the absence of the concentric ridges. The zones are sometimes obsolete.

174. P. (Placodermei) *strigatus,* n. sp.; pileo rigido tenui semiorbiculari brunneo zonato strigis parvis notato; contextu concolori; poris parvis brevibus rotundis brunneolis. *Gardn.* n. 123.

On the fallen stems of trees. Hautane. Oct. 1844.

Slightly imbricated pileus, 3 inches broad, 2 long, semiorbicular or elongated at the vertex, rigid, coriaceous, bay-brown, zoned, marked with little radiating strigæ, and finely silky.

Pores small, not $\frac{1}{100}$th of an inch in diameter, shorter than the substance of the pileus, pale-brown, when young regular, hexagonal.

This resembles very much *Trametes badia,* Berk., which is the same with *Polyp. fusco-purpureus* and *serpens,* Pers. It is also nearly allied to Pol. *caperatus,* Berk., but has not the dense pubescence of that species, and the pores are formed upon a more regular model, like those of *Hexagona,* as may be seen in the shallow young pores towards the margin.

175. P. (Placodermei) *ferreus,* n. sp.; durissimus, suberosus pileo sitaneo cervino velutino, hornotino tenui lævi subglabro fusco-fasciato, perennanti crasso rudi dealbato scabriusculoso; contextu pallido-ligneo; poris minimis pallidis. *Gardn.* n. 104, 106.

On dead wood. Hautane Range. Sept. 1844. Dense forests at base of Adam's Peak, Ceylon.

Extremely hard and rigid, varying extremely with age.

Pileus 4 inches wide, 2 long; at first ochraceous, minutely velvety, rough, with raised lines; then thin, effused behind, with the border ochraceous, zoned behind with brown fasciæ, or with the growth of the former season become black and polished; sometimes slightly sulcate. Older individuals, the growth of several seasons, become thick from the deposition of fresh strata, and the surface of the pileus becomes bleached, scabrous and cracked.

Substance pale wood-coloured, or umber.

Pores very minute, punctiform, equal, rather short, pale.

Without a good series, individuals might be referred to at least three species.

This species is nearly allied to Pol. *fasciatus*, but there is nothing fusco-ferruginous about the pileus, and Swartz's description seems to indicate a different habit. The specific name alludes to the extremely rigid nature of old specimens.

176. P. (Placodermei) *contractus*, n. sp.; imbricatus postice connatus, pileis repandis siccitate contractis nitidulis crebro-zonatis hic illic plicato-rugulosis; contextu suberoso pallido; poris minimis incarnato-umbrinis.

On dead wood. Ceylon.

Forming large masses, effused behind and giving rise to numerous repand pilei of various breadth, about three inches long, which are rigid and greatly contracted when dry; surface at length nearly smooth, pale-umber, variegated with numerous narrow zones, often rough behind, with little raised folds and a few concentric depressions.

Substance corky, pale, varying in thickness, margin acute, barren.

Pores extremely minute, umber, with a pinkish tinge.

Closely allied to P. *microporus*, and P. *Auberianus*. Besides the normal form, another of a totally different character occurs, but I believe not specifically distinct, though nothing can well be more different. In this case the pileus is solitary, very thick, and not contracted when dry, without any concentric zones, but merely three or four deep depressions, with pulvinate interstices, and the whole surface minutely pulverulento-tomentose; the pores, however, and the substance, though much thicker, are identical. From the base of one of the normal specimens, a young pileus is forming, whose surface exactly resembles that of the large ungulate individual just mentioned. Nothing requires greater caution than the proposition of new species amongst *Polypori*, where the pores and substance are similar in their characters.

*P. *zonalis*, Konig., (sub Bol.), Ann. of Nat. Hist. vol. 10, p. 375.

On rotten trees. Hautane Range, Ceylon. July, 1844.

*P. *cinnabarrinus*, Fr. Ep. p. 473.

Forest Pedro Talagalla, Ceylon. Feb. 1846.

177. P. (Inodermei) *anebus*, n. sp.; pallide cervinus; pileo semiorbiculari tenui coriaceo subtiliter pruinoso-velutino leviter zonato; margine acuto; contextu concolore; poris minimis subrotundis breviusculis.

On wood, at the base of Adams' Peak, Ceylon.

Pileus 2 inches broad, 1¼ inch long, semiorbicular, sessile, rather effused behind, of a beautiful yellow-fawn, very minutely velvety, delicately zoned, thin; margin acute.

Substance soft, of the same colour as the pileus.

Hymenium rather uneven, fawn-coloured, with a reddish-grey shade; pores very minute, nearly round.

In some specimens the zones are obsolete; in others the pileus becomes quite smooth and shining; while in a third form, the hymenium is more even and rigid, with a more decided pink bloom. In one specimen, which is decisive as to the specific identity of the extreme forms, two pilei have been produced, one of which is smooth, shining, and strongly zoned, the other pruinose.

It is allied to Pol. *pruinatus*, Klotzsch, but differs in habit, in the colour of the pileus, and in the more or less distinct zones. It agrees in the pinkish bloom which is often exhibited by the hymenium.

*P. *versicolor*, Fr. Ep. p. 478.—*Gardn.* n. 100.

On fallen trees. Hautane Range, Adam's Peak, Ceylon.

178. P. (Inodermei) *vittatus*, n. sp.; pileo sessili vel postice effuso et vertice disciformi affixo coriaceo tenui rigido subtiliter velutino odnaceo fusciis zonisque fuscis vel obscurioribus notato; margine obtusiuscolo; contextu albido; hymenio concavo inæquabili; poris mediis brevibus ochraceis.

Talagalla, Ceylon. Feb. 1846.

Pileus 2 inches or more broad, $1\frac{1}{4}$ long, rigid, coriaceous, either perfectly sessile and semiorbicular, or diffused behind, and fixed by the disciform vertex, very minutely velvety, marked with raised radiating lines, ochraceous, with brown fasciæ and delicate zones; margin rather obtuse; substance dirty-white.

Hymenium concave, uneven, ochraceous, pores middle-sized, $\frac{1}{40}$th of an inch in diameter, somewhat flexuous; dissepiments rather thick, obtuse.

Allied to Pol. *versicolor*, but far more rigid, with larger pores, and a very peculiar aspect.

*P. *elongatus*, Berk. in Hook. Lond. Journ. of Bot. vol. 1, p. 149.—*Gardner*, n. 101.

On fallen trees. Hautane Range, Ceylon.

Nothing can be more variable than this species as regards form. Many of the specimens, instead of being elongated, are orbicular, or very broadly flabelliform, and several inches wide.

179. P. (Inodermei) *setiporus*, Berk.; imbricatus ferrugineo-spadiceus sulcatus velutinus margine lobato; poris mediis angulatis postice elongatis dentatis setulosis. (Tab. XX, *f.* 2.)

On dead wood. Forests at base of Adam's Peak, Ceylon.

Densely imbricated, laterally confluent, forming masses 2-3 inches wide, 1 inch long. Pilei often diffused, and attached by the vertex behind, flexible, coriaceous, bright ferruginous brown, deeply and regularly sulcate, velvety; margins acute, lobed.

Substance of the pileus very thin, dark and rigid; that of the dissepiments soft, tawney.

Pores of the same colour as the pileus, with a yellow tint towards the margin, $\frac{1}{48}$th of an inch broad, round near the margin, then toothed, those nearest the base much elongated and often laciniate, clothed within with short stiff bristles, as in Dr. Léveillé's genus, *Hymenochæte.*

This species strongly resembles *Cyclomyces fuscus.* Its nearest ally amongst *Polypori* is P. *iodinus,* Mont., from which it is at once distinguished by its larger, brighter pores. In both, the walls are setulose, exhibiting a curious analogy between these species and the similarly coloured *Sterea.*

TAB. XX. *Fig.* 2. Polyporus setiporus: *a.* portion of hymenium near the margin: *magnified.*

*Trametes *lactineus,* Berk. in Ann. of Nat. Hist. vol. 10. p. 373.

On dead wood. Forests at base of Adam's Peak, Ceylon.

The present specimens differ in being thin, semi-orbicular, less rigid, and less irregular.

There is a single specimen of a *Trametes* from Hautane, n. 121, which has no other distinguishing character than an umber tint in the pores, substance and pileus.

180. T. *colliculosus,* n. sp.; pileo sessili semiorbiculari tenui duro coriaceo plicato-rugoso subsericeo zonato ochraceo; contextu subfulvo; poris magnis dentatis ligneo-pallidis.—*Gardn.* n. 97.

On dead wood. Dimboola, Ceylon. March, 1844. Point de Galle. Dec. 1844.

Pileus 2½-6 inches wide, 2-3½ inches long, thin, hard and rigid, rugoso-plicate, minutely silky, dull, ochraceous, with numerous depressions and zones, margin acute.

Substance pale, tawny, ochraceous.

Pores large, $\frac{1}{20}$th of an inch in diameter, angular; dissepiments thick, waved, rigid, at length elongated, dentiform.

Allied to *Trametes Beyrichii,* from which it is distinguished by the rugged, zoned pileus.

*T. *læticolor,* Berk. in Ann. of Nat. Hist. vol. 10, p. 374.

On wood. Forests at base of Adam's Peak, Ceylon.

The present specimens reach the size of 10 inches in diameter, and are more obscurely zoned. The hymenium is more perfect, and the dissepiments, in consequence, are more acute, and often elongated. The margin, also, is repeatedly lobed, the colour less bright, and the substance rather pale-tawny than wood-coloured.

181. T. *levis*, sp.; levissimus; pileo crasso ungulato ligneo-pallido subtiliter pubescente; contectu suberoso subzonato; poris longis mediis æqualibus pallidis rotundis dissepimentis crassiusculis.

Old fallen trees, base of Adam's Peak, Ceylon.

Pileus ungulate, 3 inches wide, $1\frac{3}{4}$ long, $1\frac{1}{2}$ thick, extremely light, but corky. Pale, obscurely pubescent, slightly uneven.

Substance obscurely zoned.

Pores $\frac{1}{30}$th of an inch broad, nearly equal, pale, slightly angular, dissepiments rather thick, obtuse.

The nearest ally of this species is *Trametes odora.*

*T. *occidentalis*, Fr.—*Gardner*, n. 77, 95, 122.

On fallen trees. Hautane Range, Ceylon. July, Oct. 1844. Point de Galle. Dec. 1844.

The specimen is far thicker than the form described by Klotzsch, and approaches very near to *Polyporus hirsutus*, differing principally in its pale tawny pores and substance, and the thick dissepiments, on account of which it is referred to *Trametes.*

182. Dædalea *pavonia*, n. sp.; imbricata; pileis reniformibus quandoque flabelliformibus rigidis coriaceis vertice affixis ligneo-pallidis minutissime sericeis, zonis crebris fasciatis: poris marginalibus rotundis; postice sinuatis. — *Gardn.* n. 108.

On dead wood. Dimboola, Ceylon. March, 1844. Hautane Range. Sept. 1844.

Cæspitose, imbricated. Pilei 2 inches or more broad, $1\frac{1}{2}$ inch long, often laterally confluent, reniform or flabelliform, rigid, coriaceous, slightly rugged, attached by the vertex, very minutely silky, wood-coloured, with a few brown, and many delicate paler zones; substance white.

Pores $\frac{1}{50}$th of an inch broad, those near the barren margin round, towards the centre and behind, variously sinuated, of the colour of the pileus.

Somewhat resembling some forms of Pol. *Persoonii*, Mont., but without the slightest varnish on the pileus.

*Hexagona *Konigii*, Berk., in Ann. Nat. Hist. vol. 10, p. 379.

On dead branches. Dense forests at base of Adam's Peak, Ceylon.

The pores are more regular and their dissepiments more rigid than in the specimens in the British Museum. One of them is quite resupinate.

HUSSEIA, *n. g.*

Peridium stipitatum papyraceo-corneum, ore determinato profunde radiato-sulcato, extus velo universali cartilagineo-viscoso serius reflexo et stipiti adherenti vestitum; *peridium internum* nullum obsoletumve; *capillitium* discretum totam peridii cavitatem implens, extus sterile compactum coloratum, intus magis laxum subhyalinum *sporas* numerosissimas globosas echinatas fovens.

Fungus terrestris *Mitremycem* referens.

185. H. *insignis*, n. sp.

On the ascent to Adam's Peak, Ceylon. March, 1846.

Stem 1-1½ inch high, ¼ thick, having a little bulbous mass at the base, formed by its mycelium and the surrounding soil, sulcate, clothed, as is the peridium, with a thick viscoso-cartilaginous coat, which at a later period is burst by the protrusion of the peridium, and forms an irregular ring upon the stem.

Peridium globoso-lentiform, smooth; orifice bluntly conical, deeply grooved with from eight to ten radiating furrows. Inner peridium obsolete or altogether wanting.

Capillitium distinct, but exactly filling the cavity of the peridium, consisting of a mass of spores and flocci, of which the extreme outer stratum is barren, purplish and reticulated, in some cases the meshes being partially closed by a membrane.

Flocci of the fructifying mass, pale, irregularly branched, anastomosing, very brittle, much sinuated, often bearing little blunt ramuli.

Spores globose, coarsely echinulate, clay-coloured.

Some parts of the flocci have at tolerably regular intervals little fascicles of bristles, the nature of which I cannot determine. I do not find them on every part of the capillitium, nor after the veil is ruptured.

This genus resembles externally *Mitremyces*, but not only is the covering of the peridium viscoso-cartilaginous and reflected in the form of a veil, instead of falling off like a calyptra, but the capillitium exactly fills the cavity, the outer portion consisting of a barren stratum of coloured flocci, and the spores, instead of being elliptic, are globose and coarsely echinulate.* The inner peridium is clearly represented by the barren flocci, which form a dense lining to the cavity.

I have named the genus after my friend, Mrs. Hussey, whose talents well deserve such a distinction.

A curious fungus is figured by Buxbaum, Cent. 5, tab. 29, fig. 1, under the name of "*Lycopodium vesicarium stellatum pediculo donatum,*" which has somewhat the character of the present genus, having the stem and peridium of a *Tulostoma*, with the volva of a *Geaster*.

TAB. XVII, XVIII. *Fig.* 3. *a. b.* Husseia insignis; *nat. size.*

a. Mature plant with the veil reflected.

b. Younger plant, still covered with the veil.

c. orifice :—*magnified.*

TAB. XIX. *Fig.* 1. *a.* Portion of outer barren flocci, from which proceed the fertile paler threads and spores : *magnified.*

a′. Portion of capillitium where it joins the peridium.

b. Texture of the veil :—*magnified.*

c. Ditto from another part :—*ditto.*

d. Texture of peridium :—*ditto.*

*Hexagona *polygramma*, Mont. Cuba, p. 379. Peziza *limbosa*, Houttuyn in Linn. Pflanzensyst. vol. 13, p. 521, tab. 105. fig. 5.

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* The spores of *Mitremyces Junghunii* are exactly intermediate between those of Husseia and Schweinitz species, being broadly elliptic and rough, with transparent granules, but not echinulate.—Bot. Zeit. 1844. p. 401.

Dead wood. Ceylon, dense forests at base of Adam's Peak.

183. H. *sulcata*, n. sp.; ungulata durissima; pileo badio-fusco concentrice sulcato; poris magnis subhexagonis profundis extus intusque ligneo-albis, dissepimentis lentis. (Tab. XX. *f.* 1.)

On dead wood. Forests at base of Adam's Peak. Ceylon.

Pileus ungulate, 3-4 inches broad, 2-3 inches long, extremely hard and rigid, concentrically, deeply and regularly sulcate, sometimes zoned, but more frequently without zones, rather rugged, bay-brown, with a tawny tinge towards the margin, and sometimes on the disc.

Substance thin, wood-coloured.

Pores subhexagonal, very deep, 1 line in diameter, pale wood-coloured, cream-coloured within; dissepiments thick, rather flaccid.

A splendid species, closely allied to *Hexagona Gunnii*, Berk., but distinguished at once by the regular deep grooves of the surface.

Tab. XX. *Fig.* 1. Plant; *nat. size.*

*Stereum *nitidulum*, Berk. in Hook. Lond. Journ. of Bot. vol. 2, p. 638.—*Gardner*, n. 27 *bis.*

On wood. Hautane, Ceylon. June, 1844.

*Stereum *lobatum*, *Gardn.* n. 102.

On living trees. Ceylon, Hautane Range.

184. S. *tenuissimum*, n. sp.; pileo umbonato-sessili tenuissimo dilatato fulvo-rubiginoso zonato fasciculato-villoso; hymenio inæquabili luteo-rubiginoso.

On dead wood. Forests at base of Adam's Peak, Ceylon.

Pileus at first umbonato-sessile, laterally confluent, dilated, 1 inch or more long, extremely thin and flexible, so that it may be folded in any direction without breaking, tawny, rubiginous, repeatedly zoned, clothed with coarse pubescence, which is collected into little fascicles.

Hymenium unequal, rather yellower than the pileus.

Nearly allied to *Thelephora attenuata*, Lév., *Stereum luteobadium*, Kze, and some other similar forms, but distinct from all in its very flexible pileus, coarser pubescence and redder tint.

*S. *fuliginosum*, Fr. Ep. p. 553.

On fallen branches. Forests at base of Adam's Peak, Ceylon.

*Clavaria *miniata*, Berk. in Hook. Lond. Journ. of Bot. vol. 2, p. 416.—*Gardner*, n. 30.

On the ground in open places. Peradenia, Ceylon. June, 1844.

The colour in the Ceylon plant is perhaps paler, but there is no essential difference. The clavulæ appear to be always obtuse.

*Lycoperdon *fucatum*, Lév. in Voy. Bonite. tab. 140, f. 3. —*Gardner*, n. 16.

On old trees. Hautane. June, 1844.

When young pure white, with a slight tinge of pink, pyriform, splitting from the vertex. The sporidia are not formed in the specimens before me, therefore I cannot be perfectly certain in my determination of the species.

*Lycoperdon *saccatum*, Fl. Dan. t. 1139.—*Gardner*, n. 9.

In shady places. Peradenia. May, 1844.

The specimens, though numerous, are not quite mature. Their colour is a beautiful pale tawny, precisely like that of a *Lycoperdon* gathered near Paris by M. Roussel, which he refers to L. *candidum*. There are no warts, but the whole cuticle, which is very thin, is clothed with mealy down. The peridium varies from lentiform with a cylindrical stem to turbinato-confluent. Sometimes there is a strong rooting base.

*Bovista *cervina*, Berk. in Ann. and Mag. of Nat. Hist. vol. 9, p. 447.—*Gardner*, n. 17.

On the ground. Peradenia, Ceylon. June, 1844.

When young, of a pure white. The Ceylon specimens are attached to the ground by numerous branching fibres, and not adnate by a large portion of the base, as in Mr. Darwin's plant from Patagonia.

*Clathrus *cancellatus*, L.—*Gardner*, n. 55.

In shady forests on the Hautane Range, Ceylon; rare. July, 1844. Mr. Gardner found it also on the Nielgherries in Feb. 1845.

*Phallus *Dæmonum*, Rumph.—*Gardner*, n. 14.

In shady places. Peradenia, Ceylon. June, 1844.

186. Simblum *gracile,* Berk. in Hook. Lond. Journ. of Bot. vol. 5. p. 535, tab. 17, fig. 1.—*Gardner*, n. 80.

On the ground in open places; rare. Peradenia, Ceylon. Aug. 1844.

Volva rising from a strong, slightly branched root, not lobed.

Stem 2½ inches high, ½ an inch thick, pale-yellow, marked with rectangular reticulations.

Head 1 inch high, ¾ of an inch thick, ovate, pale-yellow, deeply pitted, covered with the blackish minute oblong spores, and bearing at the apex a portion of the volva, through which it has burst.

187. Lysurus *Gardneri*, Berk. in Hook. Lond. Journ. of Bot. vol. 5, p. 535. tab. 17, fig. 2.—*Gardner*, n. 62.

On the ground, in damp shady places. July, 1844.

Volva rising from many short roots, obovate, bursting irregularly at the apex, white, 1¾ of an inch long, above 1 inch thick above.

Stem 6 inches high, rather incrassated upwards, about ½ an inch thick in the middle, dividing at the apex into five laciniæ, which are again united above, and bear on their inner surface the dark-brown spores.

188. Aseröe *Zeylanica*, Berk. l. c.—*Gardner*, 91.

On the ground in woods. Hautane, Ceylon; rare.

Roots purple, branched, anastomosing, volva short, purple, irregularly lobed.

Stem 2 inches high, 1 inch thick, pinkish.

Receptacle of 20 rays, which are rarely bifid, bright scarlet.

Hymenium forming a ring at their base of a bright purple, irregularly pervious in the centre.

*Sphæria *polymorpha*, Ehr.—*Gardner*, n. 42.

Peradenia, Ceylon.

No. 42 is a fasciculate form in an early stage of growth. No. 76, a dwarf variety, not perfectly developed.

189. S. (Cordyceps) *Zeylanica*, n. sp.; suberosa, clavulis lanceolatis compressis lævibus atro-laccatis cum stipitibus rugosis brevibus confluentibus.

On dead wood. Ambegamoa, Ceylon. Feb. 1846.

Hard, 1½ inch high, lanceolate, cylindrical, depressed, with a rather obtuse apex, even, granulated with the minute inconspicuous ostiola, black, with a ferruginous bloom, confluent, with a short rugged stem.

Spores small, unequally elliptic.

This resembles in form *Hypoxylon Lingua*, Léveillé, but is more nearly allied to S. *allantodia*, Berk., than which, however, it is a much smaller species. I do not find any assignable difference between the spores.

190. S. *Gardneri*, n. sp.; suberosa, clavulis simplicibus cylindricis obtusis rugosis a stipite discretis, ostiolis obtusiusculis; stipite elongato e radice sclerotiiformi oriente, atro glabro; sporidiis brevibus minutis.—*Gardner*, n. 14.

On the ground. Peradenia, Ceylon. Oct. 1844.

Stem 1-2 inches or more high, springing from a sclerotoid, elongated but irregular base, sometimes forked, black, smooth, strongly wrinkled longitudinally with little transverse elevations.

Head cylindrical, obtuse, perfectly distinct from the stem, wrinkled longitudinally, 1-2 inches long, greyish-black; ostiola scarcely visible without a lens; sporidia minute, short, imperfectly elliptic.

Resembling *Sphæria rhopaloides*, Mont., and *Sph. escharoidea*, Berk., the latter of which is a Ceylon species. From the former it differs materially in its minute short sporidia; from the latter in its rugged head, which is far less shagreened with the ostolla, and is not so neat a species.

Mr. Gardner's collections contain also what appear to be imperfect specimens of *Sphæria Hypoxylon*, n. 113, and a

young state of some nearly allied species on the combs of the white ant, n. 112.

*S. *concentrica,* Bolt.—*Gardner*, n. 85.

On old fallen trees. Hautane, Ceylon. Aug. 1844.

Prodromus Monographiæ FICUUM; *scripsit* F. A. G. MIQUEL *Botanices Professor Amstelodamensis.*

Quam ante tres annos exposui sententiam, Ficus auct. species, organorum genitalium fabrica et reliquarum partium, præsertim receptaculorum (inflorescentiæ) et foliorum conformatione, adeo inter se differre, ut in uno genere haud contineri possent (*Ann. des Sc. Nat.* 3. *sér. t.* 1. *p.* 31), eandem opinionem eodem fere tempore professi sunt cl. *Gasparrini,* observator plantarum eximius. (*Nova Genera supra Fici Species,* Neapol. 1844.) et cl. *Zuccarini,* accuratissimus naturæ scrutator (*Abhandl. d. Bayer, Akad. d. Wiss. t.* 1. *a.* 1844.) Profecto omnes illæ stirpes, quas ex sola inflorescentiæ similitudine in unum Fici genus hucusque coëgerunt Botanici, rectius Tribum admodum insignem inter plantas Moreas sistunt, eodem jure in genera distincta dividendam, quo alii etiam ordines, quibus communis inflorescentiæ forma, in plura dissoluti sunt.

Consilium meum explorandi omnes quotquot possem Ficuum species, suis premi difficultatibus, haud me fugiebat; tantas autem eas fore, quantas obvias inveni, haud suspicabar. Primum enim in determinandis speciebus in magnas incidi difficultates, cum multæ species nimis breviter, solummodo quoad foliorum et receptaculorum formam, descriptæ essent, ita ut in tanta sæpe consimilium copia eadem diagnosis in plures species quadaret. Aliæ ex iconibus *Rheedii, Rhumphii, Plumieri* aliorumque saltem notæ, plerumque ægre extricandæ erant, quia illæ icones, a variis scriptoribus ad diversas species relatæ, non raro ad species, propter plures affines similes perdifficiles, critice determinandas haud sufficerent, quo factum etiam est ut vel plures species sub eâdem titula hucusque confusæ sint vel eadem species sub pluribus nominibus in libris systematicis, continue transscripta inveniatur. Has ob causas non raro difficillimum erat, speciem veram typicam reperire, nec dubito quin illi, qui specimina archetypa examinare poterunt, in hac synonymiæ parte plura adhuc emendanda invenient.—Haud raro species, quæ quoad organorum genitalium indolem valde differunt, foliis et receptaculorum etiam forma sibi adeo similes sunt, ut e diagnosi librorum haud distingui possunt.

Ad florum autem structuram, in speciebus exoticis, nemo animum attendit, nisi *Forskalius*, qui *Sycomori* flores exploravit et *Roxburghius*, qui in *Flora Indica* complurium specierum genitalia accurate descripsit. Hunc autem præstantissimum Botanicum nemo secutus est nisi nuperrime cl. *Gasparrini* qui in opere laudato et in libro: *Ricerche sulla natura del Caprifico e del Fico;* Napoli, 1805, specierum in caldariis cultarum flores pervestigavit.

Post species itaque definitas, difficillimum organorum genitalium studium supererat. Omnium specierum, quas siccas aut vivas vidi, receptacula aperui, florum dispositionem et structuram sub microscopio examinavi, descripsi et iconibus fideliter exprimi curavi, in quo tædiosissimo labore haud raro omnis boni eventus spes me vix non reliquit. Postquam plures jam species ita perscrutatus eram, de novo incipiendum esse intellexi; observaveram enim, florum partes tum e diversu in receptaculis situ, tum ex ætatis differentiis, diversam haud raro formam induere, ita ut ad perfectam structuræ cognitionem haud unum sed plures flores investigare, imo variæ ætatis receptacula aperire oporteret. Ad hanc rem in Ficuum examine in posterum quam maxime esse attendendum, prudens quisque intelligat nec unquam obliviscendum, in eodem receptaculo flores masc. inveniri posse monandros, diandros et triandros, femineorum stigmata pro loco et ætate mire ludentia, abbreviata vel elongata, uni- vel bicrura, perigonia 3-5-phylla etc.

Magna etiam patientiâ opus est in sexus distributione exploranda; haud raro accidit, ut in receptaculis androgynis inter innumerabiles flores femineos paucissimi tantum masculini lateant, qui facile observatoris oculum fugiant. In omnibus itaque his speciebus et in iis stirpibus, quibus receptacula tantum fœminea sunt, omnes prope modum in talibus receptaculis flores quoad sexum explorandi sunt. Nec levior difficultas exeo oboritur, quod eadem species pro variis vegetationis periodis varia et diversa receptacula, i. e. quoad sexus distributionem et florum structuram dissimilia proferat, cujus rei eximia exempla in Ficu Carica, F. Caprifico et affinibus eximie explorata oculatissimus *Gasparrini* proposuit. In speciebus exoticis hujus rei accurata notitia adhuc plane deest.—In acheniorum etiam examine normalia ab iis quæ cynipum larvis grossificata sunt, caute distinguere oportet.

Observationes meas, quas botanicorum judicio jam submitto, minime absolutas et completas esse, ingenue confiteor. Omnes autem, qui vivas stirpes examinare poterunt, rogo, ne hoc studium negligant ut ita materiem colligant qua aliquando completum Ficuum Systema exstrui possit.

Monendum etiam non omnes species hodie enumerari; haud paucas enim quas nondum vidi aut quarum affinitas incerta videbatur, omisi.

Ratio novorum generum.

Quam primum ad generis divisionem accesseram, species habitu congruas colligere tentavi et, comparata deinde genitalium structura, investigavi, num hac ratione naturæ vestigia legere possem. Vidi autem felicem eventum mihi hac via progredienti non semper sperandum esse. Complures enim species foliorum et stipularum forma simili instructæ, receptaculorum et florum structura inter se valde diversæ erant et contra multæ quæ primo adspectu admodum dissimiles videbantur, accuratius investigatæ, receptaculorum et florum structura arcto connubio junctæ inveniebantur.

Ad analyticam itaque methodum reversus, deposito pro tempore omni ex habitus similitudine judicio, juxta receptaculorum structuram, i. e, juxta inflorescentiæ differentias et juxta genitalium conformationem systema exstruere incepi. Hac methodo autem prudenter esse utendum mox intellexi; nam si ad characteres, qui in aliis ordinibus ad genera condenda valent, recurrere voluissem, ingens generum mere artificialium numerus exortus fuisset, novo documento, ut qui genera naturæ consentanea invenire velit, ad totius ordinis indolem animum attendat; perpensis organo geneseos legibus, leges, quibus typus ordinis mutatur, cognoscet, et positis ita solidis fundamentis, e comparatione omnium civium solummodo genera inveniat necesse sit. Hac regula non satis perpensa, factum esse videtur, ut illi qui paucas tantum Ficuum species examinaverint, differentiis inter has repertis nimii factis, generum numerum nimis auxerint. Quam maxime etenim singularis inflorescentiæ ratio est, qua in arcto receptaculi clausi spatio magna florum multitudo inclusa est, qui situ undique pressí, luce orbati, impedita ferme evolutione, minus completi et pro varia situs opportunitate diversi esse debere videntur, unde sequitur, characterum e floris partibus petitorum valorem prudenter esse ponderandum. Manifesto etiam constat, totius inflorescentiæ et florum evolutionis eum communem esse characterem, ut ad omne spatium floribus replendum, forma et magnitudo eorum huic scopo adaptatæ et mutatæ sint, et ad fœcundationem perficiendam, pro singula fere specie genitalium formam fundamentalem vario modo natura mutaverit. Doctrina teleologica fœcundationis eximia in his receptaculis exempla habet. Sic in eodem receptaculo flores alii valde elongati, alii abbreviati inveniuntur, ut nullus spatii locus sit vacuus; ovaria nunc sessilia, nunc gynophora suffulta; styli longi vel breves; stigmata in fœcundations scopum continuæ mutationi subjecta, quandoque abbreviata, nunc elongata in quibusdam forma valde inconstantia.

Ad bracteolarum (quæ floribus interpositæ vel eorum pedicellis insertæ) defectum vel præsentiam et ad earum dispositionem, monente cl. *Zuccarini*, summa cura erat attendendum, cum his ipsius inflorescentiæ natura, quæ vel racemosa vel cymosa esse videtur, innotescat. Perigonii evolutio caute prosequenda, nam quibusdam speciebus flores omnino nudi, aliis primum nudi sed peracta fœcundatione, perigonio normali teguntur. Cum perigonia omnibus speciebus sint persistentia, serius, acheniis increscentibus, vario modo mutantur, ita ut juvenilium et senescentium forma admodum diversa inveniatur; in Ficus (excl. sp.) speciebus pluribus juniora v. c. monophylla dentata vel partita, adulta polyphylla.

Ab altera parte autem florum structura in generibus condendis minime negligenda erat, imo certi fere characteres ex illis petendi solum videbantur. Notis ex his petitis cum inflorescentiæ natura, scil. receptaculorum situ, forma, bractearum et bracteolarum dispositione comparatis, instituta simul organorum vegetationis comparatione, haud nova itaque taxonomiæ lege ductus, genera quæ nunc propono constituere tentavi. Mihi persuasum habeo fore botanicos, qui hanc Fici generis divisionem vituperent, dum contra alii genera mea nimis ampla characteribus nimis late circumscripta existiment. In quam partem ipse peccaverim; seu in medio tutissimus fuerim, æqui judices jam dijudicent.

Organorum modificationes.

Caulis arboreus coma ampla e ramis non raro radicifera, vel fruticosus, ramosus, erectus, scandens vel repens; aliquando eadem species vel arborem sistit vel stirpis fruticosæ repentis formam induit. Inter Urostigmata præsertim indica plures arbores e trunco vel ramis radicantes, vastæ sæpe magnitudinis; ingentes etiam sunt Africæ Sycomori et Urostigmata quædam, sed, ni fallor, e trunco vel ramis haud radicantes; Pharmacosyceæ in America magnos haud raro arbores sistunt. Ficuum species plures fruticosæ, aliæ repentes, aliæ erectæ, inter quas arbores tamen etiam occurrunt, præsertim in sect. *pallidarum*.

Folia sunt alterna, raro opposita, interdum in eadem specie. Covelliæ plures species et quædam Fici species, præsertim e sect. Sycidii folia habent opposita; sunt porro integra, rarius lobata, imo subpinnatifida sed hæc forma inconstantia; serrata, dentata, repanda, integerrima. Folia lobata et pinnatifida in Fici tantum speciebus occurrunt. Urostigmatis species omnes Pharmacosyceæ fere omnes et complures Sycomori, quædam Covelliæ et pauciores Fici species folia integerrima sæpe perennantia habent, reliquæ Fici, Covelliæ species foliis dentatis vel serratis sunt instructæ. Nervi in foliis lobatis digitati, in reliquis pinnati et tum (in Urostigmatibus quibusdam) vel omnes tenues numerosi paralleli ante marginem in nervum marginalem confluentes v. c. in foliis coriaceis integerrimis plurium Urostigmatum, vel tenuiores cum validioribus costis alternantes, quarum vulgo una utrinque e basi, quæ dispositio in plerisque speciebus obtinet. Membranacea sunt vel coriacea, sæpe parvis vel fortioribus punctis, e materie inorganica in quibusdam cellulis ex Payeni eximiis observationibus deposita, vel verrucis e basibus induratis pilorum deciduorum ortis, quandoque glandulis conspersa vel subtus majoribus glandulis præsertim in axillis venarum positis instructa; alia glabra alia pubescentia, hirta, villosa, tomentosa, pilis autem sæpe ætate deciduis, inde characteres e pubescentia derivati vulgo fallaces. In quibusdam Fici speciebus pili ipsi ætate indurescunt, e Silica fere vitrei facti. Forma foliorum a rotundata usque ad linearem fere obtinet, in quavis specie non raro multum varians, quod præsertim valet de iis quæ folia lobata habent et de speciebus quarum caules primarii repunt, quibus foliorum primariorum forma a foliis rameis longissime differre potest.

Stipulæ ad quemvis petiolum geminæ, vulgo caducæ, rarius subpersistentes, in plerisque speciebus perulaceæ, i. e. perularum ad instar folia virginea includentes et tum sæpe in magnum cornu convolutæ, exteriore interiorem magnitudine superante.

Receptacula (seu inflorescentia coarctata internodiis confluentibus cum bracteis maximam partem in unum corpus coalitis) in quavis axilla gemina (itaque duo axes florentes) pedunculata vel sessilia, bracteis vulgo involucrata vel liberis vel in calyptram coalitis, deciduis e foliis et stipulis abortivis ortis, *bracteis*que *propriis* ad basin receptaculi 3-2 liberis vel coalitis verticillatis vel in receptaculo, quod subtus in stipitem constrictum est, stipite irregulariter ad basin vel medium vel apicem, vario in singula specie modo, insertis. Hæ bracteæ propriæ limitem inter *pedunculum* et *receptaculum* sistunt, quare stipitem seu partem constrictam receptaculi sæpe bracteiferam a pedunculo distinguo. *Stipitem* receptaculi partem esse, similitudine pubescentiæ etiam comprobatur. Duo, ut dixi, sunt axes florentes primarii e quavis axilla; sæpe numero autem unus rudimentarius manet et mox evanescit, unde receptacula tunc solitaria; plura genera receptacula constanter gemina, alia gemina et solitaria (sæpe in eadem specie) alia solitaria tantum proferunt. Inter quodvis receptaculorum par latet *gemma axeos foliosi rudimentaria*, quæ raro efformatur; in Fici sectione Podosyce autem in ramos excrescit. In quibusdam generibus hic receptaculorum situs aliam speciem induit. In Sycomoris v. c. et compluribus Covelliis ramorum receptaculiferorum folia magnitudine diminuta et forma mutata ad squamas reducta inveniuntur, unde receptacula in racemos simplices vel compositos e truncis vel ramis vetustioribus protrusos disposita adparent. Quandoque in pluribus Ficubus et quibusdam Urostigmatis speciebus ex una axilla, plerumque e vetustiore cujus folium cecidit, plura receptacula fasciculatim prodeunt, quæ tunc tuberculo vel ramo abbreviato bracteato inserta sunt, quæ evolutionis ratio itaque cum illa quæ in Covellia et Sycomoro obtinet comparari potest.

Receptacula vel globosa basi 2-3-bracteata pedunculo inserta vel hoc brevissimo aut fere nullo sessilia, aut globosa sessilia sed in stipitem attenuata, vel obovata, turbinata, pyriformia etc. Si receptacula pedunculata simul in stipitem constricta sunt, pedunculum medio bracteatum dicunt auctores systematici. Omnia receptacula ore pervia extus *bracteis* numero variis occlusa, cæterum ipsa extus vulgo nuda sunt, attamen in aliquibus receptacula undique sparsas gerunt bracteas, ipsorum receptaculorum naturam revelantes,

v. c. in Covelliis plurimis, in quibusdam Fici speciebus e sectione Sycidii etc. *Paries interna* sub ore et in ore bracteis vulgo numerosis imbricatis horizontalibus instructa est; reliqua pars flores tantum fert vel *bracteolas* etiam iis interpositas. Apex receptaculorum inflorescentiæ typicæ pars inferior; hic etiam prius efformatur. Num bracteolæ quæ flores comitantur revera bracteolæ vel potius bracteæ dicendæ sint, mihi nondum satis liquet. Forma alia et magnitudine multum minore a bracteis illis differunt et si desunt, bracteæ tamen reperiuntur. Inter bracteolas pili etiam quandoque inveniuntur vel loco bracteolarum pili rigidi vel setæ. Superficies parietis interni vel lævis vel in quibusdam foveolata aut tuberculis prominentibus floriferis instructa. Ipse receptaculorum paries vel tenuis fere membranaceus siccus, vel crassus durus aut carnosus, ætate succulentus, junior succo lacte scatens, maturus quandoque mucilagine et materie Saccharina plenus.

Flores vulgo monoici; masculini multo pauciores, quandoque paucissimi, vel in superiore (quod ad inflorescentiam attinet inferiore) receptaculi parte, tunc sæpe quasi penduli, vel rarius cum femineis mixti; alia receptacula sunt polygamo-monoica, scil. flores ferentia masculos pistillo rudimentario vel nullo aut femineos cum stamine quandoque normali, *i. e.* flores hermaphroditos. Plura vidi receptacula flores fem. tantum velantia, nulla vidi quæ masculos tantum habebant.

Flores sunt vel *perigonio tecti* vel *nudi;* hi multo rariores in Covelliæ speciebus et in Synoecia tantum inventi; hoc genus pistilla et stamina prorsus nuda nec bracteolata adeo dense permixta fert ut limites inter singulos flores plane incerti sint. In Covellia flores vel omnes vel major pars feminei, nudi vel serius perigonio tecti; masculini in sup. parte receptaculi bracteolati et perigonio instructi.

E bractearum, bracteolarum et florum situ concludendum videtur, inflorescentiam Ficuum esse vel racemosam vel cymoso-dichotomam. Attamen hac de re nondum satis accuratæ in omnibus speciebus exstant observationes. Monendum saltem, flores masculinos qui in receptaculo vulgo sunt superiores, itaque in inflorescentia inferiores, serius florere, quod florescentiam centrifugalem indicat.

Perigonii forma multis variationibus tum quoad genera tum quoad species tum pro variis locis in receptaculis subjecta est. Vulgo duplicis generis flores in quovis receptaculo distinguendi sunt, breviores et longiores; in illis phylla sunt vulgo prorsus libera, in his in pedicellum deorsum concreta. In aliis contra flores plures revera pedicellati sint, pedicello tum vulgo parvas bracteolas gerente. Situs phyllorum est vel plane verticillatus vel sæpius spiralis ita ut tunc limes inter phylla perigonii et bracteolas fere sit arbitrarius: magnitudine vulgo inæqualia, superiora majora; præfloratio imbricativa, raro valvata; numerus variat a 2-6 etc.

Quoad compagem phyllorum perigonii distinguenda sunt perigonia hyalina tenera albido-decolora quæ recta fere sunt in Ficubus multis et obliqua in iis e sect. Sycidii, et perigonia fusca nitida magis firma e crassiore contextu formata, ut in Urostigmate, Pharmacosycea, etc.

Vix bene perigonia in gamophylla et dialyphylla distingui possunt tum quia ipsa distinctio hic haud facilis, tum quia utraque forma in eodem receptaculo occurrit, tum denique quia florum virgineorum perigonia semper gamophylla esse videntur. (*Conf. Gasp. Ricerche*, p. 9-10.)

Omnia perigonia persistentia sunt, ætate adhuc aliquid increscentia, mutata vel vix mutata, vario modo achenia fulcientia vel fere includentia.

Staminum numerus variat ab 1 usque ad 5, numero in plurimis generibus constanti; perigonio sæpenumero inclusa, in quibusdam inde ab initio exserta, ejus phyllis opposita, si plura adsunt; stamen solitarium fere centrum floris occupat. *Filamenta* in compluribus brevia, imo brevissima, in Ficubus quibusdam satis elongata, in *connectivum* crassum dorsale haud vero supra loculos prominulum desinentia, basi vel dorso antheræ inserta. *Antheræ* sunt semper biloculares, loculis vel ob omni parte discretis vel apice aut antice intime junctis nec vere confluentibus, parallelis oppositis vel connectivo abbreviato dilatato fere horizontalibus impositis; singuli loculi rimis lateralibus longitudinalibus subanticis dehiscunt. Antherarum forma vulgo est oblonga vel elliptica in quibusdam lineari-elongata, loculis fere contiguis, valde angustatis lateralibus, uti in *Pogonotróphe* et præsertim in *Synoecia.* Aliquando singularis obtinet antheræ structura in quibusdam Ficuum speciebus a cl. *Gasparrini* (*Ricerche,* tab. VI. fig. 1-9) primum observata, in quibus connectivum valde dilatatum explanatum loculos prorsus disjunctos circumdat et ipsum etiam filamentum margine utrinque membranacea instructum est, ac si metamorphosi retrograda stamen ad forman phylli perigonialis rediret, ut in variis Antholyseos conditionibus et in floribus plenis observatum est. Veras Antholyses inter Caprificorum flores descripsit cl. *Gasparrini* l. c., quibus flos singulus fere in parvam spiculam bracteatam mutatus erat.

Granula pollinis ellipsoida et globosa sunt, lævia, hyalina, duobus membranulis conflata, unicum vulgo tubum pollineum exserentia.

Pistillum vel sessile vel gynophoro sustentum. *Ovarium* plus minusve evidenter dimidiatum,latere uno recto, altero convexo, illo cum stylo continuo, hoc magis magisque excrescente, stylumque lateraliter libet tandem fere ad basin repellente. Ovarii paries tenuis, in multis diaphanus, e cellulis parenchymaticis formatus, in quo postea fasciculus vasorum spiralium formatur e gynophoro adscendens, infra ovarium bifidus, ramo uno ad ovuli insertionem continuato, altero extrorsum per latus convexum in stylum penetrante. Primus cl. *Gasparrini* (*l. c. p.* 31. *seqq. tab. VI.*) hæc omnia accurate exploravit; in septem Fici speciebus e sect. Sycidii, in uno Sycomoro et in quibusdam Urostigmatibus omnino eandem reperi conformationem et in omnibus obtinere crederem. Post fœcundationem *pericarpium* vulgo exarescit, fere totum evanescit, pelliculæ siccæ ad instar semen obducens, rarius uti v. c. in Ficu Millesii succosum et crassius adparet, ipsumque perigonio amplexum quandoque partim cum eo connatum est.

Ovulum unicum, parieti styligero ex apice appensum nascens *trophospermio* celluloso (demum evanescenti) insidens; serius elevatur et amphitropum factum; exostomium dirigitur versus ovarii apicem. *Integumenta* dua nucleum laxe cellulosum includunt. Embryonis primam formationem exploravit cl. *Gasparrini* l. c. p. 32, tab. VI.

Membrana externa seminis indurescit et *testam* duram vel fragilem vel satis crassam sistit; *interna* in tenuem *endopleuram* mutatur. *Chalaza* hylo proxima, quod parva *caruncula* instructum. *Embryo* in *albumine* carnoso curvatus; *cotyledones* planæ incumbentes chalazam, radicula hylum spectant. *Albuminis* copia admodum varia in diversis speciebus adparuit, in quibusdam Urostigmatis speciebus fere nullum, saltem tenuissimum, *embryo* contra crassus.

Ovaria bilocularia biovulata in Ficubus cultis observavit cl. *Gasparini* et ipse in una specie exotica idem fere vidi. Quæstio inde aboriri posset, num Ficuum ovaria typice bilocularia vel e carpellis 2 formata statuenda sint, uno ex constanti lege abortiente. Stigmata in plurimis bicrura vel si solitaria sint, obliqua, hanc hypothesin firmarent. Nec tamen ipsa hypothesis mihi probabilis videtur, cum in aliarum specierum ovariis nunquam alternis ovuli rudimentum invenerim et in aliarum etiam plantarum carpellis simplicibus stigmata bicrura inveniantur quare ovaria illa bilocularia in Ficubus observata potius ex coalitione duorum florum vel e Synanthia explicari posse videantur.

Cynipum larvas in plurimis etiam Asiæ, Africæ et Americæ speciebus inveni, et ovaria tunc semper magnitudine multum aucta.

CONSPETCUS GENERUM.

a fl. perigonio instructa.

I. Urostigma.—Fl. Monoici, bracteolati, in receptaculo globoso basi 2-3-bracteato. Perigonium tripartitum raro 4- vel 2-partitum (fuscum.) *Masc.* Stamen 1. *Fem.* Stigma simplex caudatum vel lineari-carinatum, rarissime abbreviatum.

A. *Genuinæ.* Recept. globosa basi 3-bracteata. — Asiaticæ, Australasicæ, Africanæ.

B. *Americanæ.* (Galactoglychia, *Gasp.*) Receptacula basi bibracteata.

C. *Oreosycea.* Recept. in stipitem tribracteatum constricta. Asiaticæ paucæ.—Fl. monoici mixti (in A. et B. masc. superiores.)

II. PHARMACOSYCEA. Fl. monoic. bracteoli, in receptaculo globoso basi tribracteato. *Masc.* Perig. 4-phyllum (fusc.) Stamina 2, antheris oblongis. *Fem.* Perigon. 4-6-phyllum. Stylus brevis, stigmate bi- vel uni-cruri. Americanæ.

III. POGONOTROPHE. Flores monoici in receptaculo globoso basi 3-bracteato intus pilosissimo ebracteolati. Perig. 4-5-phyllum. *Fem.* Stigma obliquum carinato-lanceolatum. *Masc.* Stamina 2, antheris linearibus.—Asiaticæ.

IV. SYCOMORUS, *Gasp.* Flores monoici in recept. turbinatis vel subpyriformibus supra ramos aphyllos racemosis. *Masc.* Perig. 3- raro 2-phyllum; stamina 1 plerumque 2, raro 3. *Fem.* Perig. 3-polyphyllum, ovario sessili, stigmate elongato recto mox clavato.—Africanæ (et Arabicæ.)

V. FICUS, *Linn. excl. sp.* Flores monoici vel polygamo-monoici, in recept. axillaribus pyriformibus vel globosis vel globoso-stipitatis basi bracteis 3 verticillatis vel totidem pluribusque sparsis. Perigonium (vulgo hyalinum raro fuscum) 4-6-phyllum. *Masc.* Stamina 1-6, antheris ovatis vel reniformibus. *Fem.* Stigmata bi- vel oblique unicrura centro excavata vel perforata.

b. Flores feminei absque perigonio.

VI. COVELLIA, *Gasp. Masc.* Perig. 3-partito. *Fem.* Nudi vel serius perig. instructi. Stigma tubuloso-hians recto- vel oblique truncatum.—Asiaticæ.

c. Flores in recept. prorsus nudi, mixti.

VII. SYNOECIA.—Asiaticæ.

I. UROSTIGMA.

(*Urostigma* Gasparr. Nov. Gener. p. 7, Ricerche, p. 81. tab. VII. *Visiania* Gasparr. Nov. gen. p. 9, haud DC.

Macrophthalma ejusd. Ricerch. p. 83, tab. VIII. *Cystogyne* Gasp. nov. gen. p. 9, Ricerche, p. 84, tab. VIII. *Galoglychia*, Gasparr. Nov. gen. p. 10, Ricerche, p. 84.)

Flores in *receptaculo* globoso, raro basi constricto; 3- vel bibracteato monoici, bibracteolati, sessiles vel pedicellati, superiores masc. pauciores, reliqui feminei, raro prorsus mixti. *Perigonium* tri- rarius bipartitum, lobis concavis fuscis. *Masc. Stamen* 1, *filamento* brevi, *anthera* biloculari ovata vel elliptica, loculis connectivo dilatato adnatis. *Fem. Ovarium* gynophoro suffultum vel sessile, uniloculare uniovulatum, *stylo* laterali, *stigmate* simplici, aliis elongato-filiformi, aliis lanceolato-canaliculato, aliis abbreviato, convexo vel concavo, aliis calyptratim recurvato. *Achenia* fuscescentia, epicarpio tenuissimo vel dehiscente.

Arbores fruticesve in calidioribus totius orbis regionibus, in Asia tropica et *Novo Orbe* frequentes, in Africa pauciori numero inde ab *Egypto Sup.* usque ad *Prom. b. sp.* dispersæ, in *Australasia* rarescentes.

A. Species Novi Orbis 1-69.
B. Species Africanæ 70-97.
C. Species Australasicæ 98-107.
D. Species Asiaticæ 108-161.
E. Species, quarum patria dubia, 164-170.

A. *Species* NOVI ORBIS, (Galoglychia [Galactoglychia] *Gasp. nov. gen. p.* 7.

Arbores ingentes vel frutices. *Folia* omnium alterna, plerumque oblonga raro rotundata et cordata, vario modo pubescentia vel glabra, integerrima costata vel costivenia aut venis tantum capillaribus sub-immersis. *Receptacula* axillaria pedunculata vel sessilia, gemina vel solitaria, involucro bilobo vel diphyllo, vulgo provectiore ætate quadrilobo, in quibusdam saltem cupuliformi-bisinuato. *Stigma* carnosum coloratum lanceolato-canaliculatum vel excavato-dilatatum, serius magis increscens et in quibusdam calyptræformi-reflexum.

OBSERV. Species Americanæ ab Asiaticis quamvis tum involucro receptaculorum, tum stigmatis forma recedentes, generice haud separandæ sunt, omnesque cum intermediis omnino tum habitu tum partium structura stirpibus Africanis, in genus naturalissimum colligendæ.

§. 1. Grandifoliæ, *glabræ vel pubescentes, foliis cordatis, oblongisve costatis, recept. sessilibus vel pedunculatis.*

1. Urostigma *nymphæifolium.* (Ficus nymphæifolia, *Linn. Mantiss, p.* 305. Ficus nymphææ folio, *Royen, Lugd. Bot. p.* 211. F. nymphoides, *Thunb. diss. n.* 2.)

HAB. In America Merid.—nec in Ind. Or., uti apud quosdam auctores statuitur.

2. U. *eximium.*—(Ficus eximia, *Schott in Spreng. Syst. Veget. addend. p.* 410. *Kth. l. c. p.* 15.)

HAB. Brasiliam.

3. U. *doliarium.*—(Ficus doliaria, *Mart. MSS.* F. ferruginea, *Hort. Vindob.*) Foliis ovatis obtusiusculis utrinque circiter 14-costatis, supra glabris, subtus in nervis petioloque fusco-hirtis.

HAB. Brasiliam, *Mars!* col. in H. Monac.

4. U. *petiolare.*—(Ficus petiolaris, *H. B. K. nov. gen. p.* 49.)

HAB. In jugis Mexicanis.

5. U. *calyptroceras,* n. sp. Ramulis junioribus petiolis foliisque subtus tomentello-pubescentibus, his subcoriaceis supra pilis deciduis inspersis, longe petiolatis ovato-rotundatis æquilateris basi cordatis, integerrimis, trinerviis et utrinque 5-7 costatis, stipulis submembranaceis ovatis acuminatis carinato-concavis, pubescentibus, receptaculis axillaribus sessilibus nascentibus involucro (stipulis) calyptræformi cornuto inclusis, obovato-globosis, incano-pubescentibus, basi involucro-bilobo instructis, apice bracteis 2-3 valvatim clausis.

HAB. In Prov. Piauhy Brasiliæ, "banks of the lake at Paranagoa, Aug. 1839; a large tree," *Gardner in herb. Hook.* n. 2729.

Rami demum glabri. *Petioli* 4-fere 7 cent. longi. *Folia* supra lævia viridia, subtus fuscescentia, nervo costisque prominentibus, his extrorsum ramosis bifidis et anastomosantibus 1 reticulata, 3-17 cent. longa, 10-13 lata. *Stipula* 3 cent. *Receptacula* juniora pisi circiter magnitudinis.

6. U. *fulvum*, (Ficus fulva, *Spreng. Syst. Veg. III. p.* 779, *haud Blum.*) "Foliis cordato-oblongis obtusis supra scabris, subtus fulvo-tomentoso-villosis, ramis villosissimis."

HAB. Brasiliam, *Sello.*

7. U. *ellipticum.* (Ficus elliptica, *H. B. K. Nov. Gen. II. p.* 46.) Ramulis petiolis foliis subtus in nervis venulisque supra in nervo medio rubiginoso-tomentosis sensim scabrescentibus, his modice petiolatis obovatis vel obovato-ellipticis apice rotundatis basi leviter emarginatis vix subcordatis supra scabris integerrimis, majoribus vix subrepandis trinerviis et utrinque 5-7-costatatis demumque subtus scrobiculato-reticulatis, receptaculis axillaribus geminis? brevissime pedunculatis obovatis molliter pubescentibus pedunculo involucrique bilobi basi setuloso-hirtis.

HAB. Novam Grenadam, *Humb.*, ad Marcadilla prope Magdalena fl., Caoutchouc promens, *Goudot!* B. n. 2. in *herb. Hook.*)

Ramuli crassi pilis patentibus densissime obtecti. *Petioli* ½-2 cent., *folia* 7-14 cent. longa, 5-8 lata. *Costæ* ante margines bifidæ arcubusque junctæ. *Gemmæ terminales* ovatæ acutæ sericeo-villosæ ½-1 cent. longæ. *Receptacula* ceraso minora.

8. U. *rufum.* (Ficus rufa? *Schott in Spreng. Syst. Veget. t.* 10. *App. p.* 410, *phrasi brevissima satis congrua.*) Ramulis gemmis petiolisque subtomentosis, foliis modice petiolatis oblongis, ellipticis vel ovato-ellipticis obtusis vel acutis, basi truncatis vel leviter cordatis integerrimis, basi 3-7-nerviis et utrinque 8-15-costatis, coriaceis supra lævibus glabris, subtus sublutescenti-pubescentibus, receptaculis axillaribus geminis brevissime pedunculatis globosis albido-tomentello-pubescentibus.

HAB. Bahiam, in collibus, *Saltzman!* sub *Ficu microphylla*, in herb. Hook.)

A præcedenti statim foliis supra lævibus et costis numerosioribus differt. *Petioli* 1½-4 cent., *folia* 10-19 cent. longa, 6-fere 9 lata, subtus costis versus margines ramosis et anastomosibus magis magisque prominulis demum subscrabiculata. *Stipulæ* 1½ cent. ovatæ acuminatæ imbricato-convolutæ. *Receptaculo* ceroso majora, pariete tenui, *pedunculo* et *involucri basi* hirto-tomentellis.

Ficu rufæ, Schott; folia apice acuta tribuuntur, quod in meis rarius obtinet; minora apice omnino rotundata sunt.

9. U. *Maximilianum*, (Ficus Maximiliana, *Mart. herb.*) Foliis oblongis, ellipticis vel subovato-ellipticis apice obtusiusculis vel lato-rotundatis, basi leviter cordatis vel truncatis integerrimis, trinerviis et utrinque 5-8-costatis nervo medio in minoribus infra apicem terminato, coriaceis, supra glabris vel glabriusculis lævibus glandulosis, subtus petiolis ramulisque pubescentibus ochraceo-lutescentibus reticulatis, gemmis parvis ovatis acuminatis flavo-sericeis, receptaculis axillaribus pedunculatis obovato-globosis adultis glabris ore bracteis abbreviatis latis marginato, pluribus bracteis imbricatis repleto, floribus sessilibus vel longe pedicellatis fuscis.

Hab. Inter Cabo Frio et Camoor Moras Brasiliæ, *Pr. Maxim. Vidensis ! in herb. Mart.*

Arbor alta. *Ramuli* puberuli cito glabrati. *Petioli* mox glabri antice bisulcati 2-4 cent. long. *Folia* in sicco aurantiaco-flavescentia, subtus costis patulis versus margines adscendentibus confluentibus, anastomosibusque reticulata, 6-15 cent. longa, 4-7 lata, *gemmæ* ½ cent., *pedunculi* 1½ cent. longi. *Receptacula* cerasi magn.

10. U. *gummiferum*, n. sp. Ramulis petiolisque fuscescenti-villosulis, foliis modice petiolatis oblongis vel obovato-oblongis brevi-acuminatis basi truncatis vel subexcisis, 5-7 nerviis et utrinque 10-15-costatis, supra nitidis scabriusculis in nervo medio parce hirtellis, marginibus subdenticulatis fasciculato-ciliolatis, subtus fuligineo-tomentellis, stipulis ovato-lanceolatis, in gemmam concavam elongatam convolutis receptaculis axillaribus sessilibus ?

Hab. Hevram, ad Guayalil, 3000 p. alt. supra mare, *Col. Hall !* n. 29. in herb. Hook.

Inter congeneres, receptaculis licet incognitis, vix dubia, præcedentibus similis attamen distinctissima, teste Hallio etiam Caoutchouc promens. *Petioli* 1-1½ cent., *folia* 17-18 longa, 7-10 lata, supra in sicco nigrescentia. *Stipulæ* 3 cent. sericeo-villosæ.

11. U. *Gardnerianum*, (an huc Ficus foll. ovat. *Plum. Icon. t.* 131. *f.* 2.) Ramulis foliisque glabris, his longiuscule petiolatis lato- vel subrotundato-ellipticis, utrinque obtusissimis, raro versus basin angustatis, integerrimis, coriaceis, trinerviis et utrinque 5-6-costatis, costulis patulis versus margines adscendentibus bifidis et conjunctis, stipulis glabris ovato-acuminatis convolutis coriaceis, receptaculis axillaribus geminis quam brevissime pedunculatis basi involucro bilobo coriaceo puberulo sustentis, ellipticis, cinereo-tomentellis, ore bracteis 3 crassis concavis glabris erecto-incumbentibus occlusis, pustulatis.

HAB. In Prov. Piauhy, Brasiliæ, in fin *Paranagoa*, in fert. 1839, *Gardner*, n. 2728! in herb. Hook.; ad Fl. Amazonum, in Para, *Mart.;* Antigua, sp. sterile, *Dr. Nicholson!*

Arbor magna. *Petioli* 4-4½ cent., *folia* 13-18 longa, 6½-11 lata. *Receptacula* 2 cent. longa, *pedunculis* 2-3 mm. longis cum involucro amplo subsericeo-puberulis.

Adnot. Ficus umbrifera, Kth. et Bouch. l. c. p. 18. (F. crassinervia, *Hort. berol.*) hujus fere loci videtur. Sed et patria et receptacula adhuc incognita.

12. U. *pallidum.* (Ficus pallida, *Vahl, Enum. II, p.* 194.)

HAB. Ad St. Martham.—*U. clusiæfolium* affine videtur.

13. U. *giganteum.* (Ficus gigantea, *H. B. K. II. p.* 48.

HAB. In Nova Andalusia et Caracas.

14. U. *cotinifolium.* (Ficus cotinifolia, *H. B. K. Nov. Gen. II, p.* 49.)

HAB. Mexicum.

15. U. *hirsutum.* (Ficus hirsuta, *Schott! in Spr. Syst. Veg. cur. post. addend. p.* 414, 1827, *haud Roxb. Fl. Ind. III, p.* 528, 1832.) "Ramulis rachis teretibus petiolisque molliter pilosis; foliis subobovato-oblongis, acuminatis, basi rotundatis (vel obtusis) triplinerviis, integerrimis,

nervis primariis tenuibus, remotis, prominulis, costa subtus prominente, membranaceis subtilissime pellucido-punctulatis, subtus pallidioribus, utrinque præsertim subtus in costa et nervis pilosis; receptaculis . . . ."

Hab. Brasiliam, *Schott!* vidi cult. ex H. Nudab.)

Folia 3-3¼ poll. longa, 19-20 lin. lata. *Petioli* 3-4 lin. longi.

16. U. *holosericeum.* Ficus holosericea, *Schott, in Spr. Syst. Veg. Cur. port. p.* 410. *Kth. l. p.* 18, ubi character diff. anuratus.)

Hab. Brasiliam, *Schott;* col. in H. berol.

17. U. *Gomelleira.* (Ficus Gomelleira, *Hort. Monac. Kth. et Bouch. l. c. p.* 18.) Ramulis rectis, teretiusculis, petiolis gemmisque conico-subulatis ferrugineo-hirsutis; foliis ellipticis, breviter acuminatis, basi rotundatis, cordatis, subtrinerviis, integerrimis, nervis primariis remotis costaque subtus convexo-prominentibus, herbaceis, epunctatis, pellucido-reticulatis, supra nitidis, puberulis, subtus mollissime lutescenti-pilosis, receptaculis . . . .

Hab. Brasilia.

Folia 12-13 pollicaria, 6¾-7 lati. *Petioli* 1¼ poll. longi.

18. U. *velutinum.* (Ficus velutina, *Willd. Sp. IV. p.* 1141. *H. B. K. Nov. Gen. II. p.* 46.)

Hab. In temperatis Andium, Novo Granatensium, *Humb.*

19. U. *tomentellum,* n. sp.; foliis lanceolato-oblongis breviter acuminatis basi rotundatis integerrimis æquilateris coriaceis supra subscabriuscule pubescentibus, subtus subrubiginosis pubescenti-tomentellis, trinerviis et utrinque 10-12-costulatis, nervo reticulatis medio percurrente . . . .

Hab. In Prov. Paraensi, Brasiliæ, *Mart.!*

Sequenti maxime affinis, nec non ad *U. Maximilianum* proxime accedens. *Petiolus* sparse hirtello-puberulus antice pluri-sulcatus, 3½ cent. longus. *Folia* 20-21 cent. longa, 7½-8 lata, in sicco fuscescentia, costis erecto-patulis ante margines arcuatim junctis, crebro nec valde prominenter reticulatis; nervus medius deorsum glaber.

20. U. *crocatum.* (Ficus crocata, *Mart. herb.*) Petiolis semitereti-compressis, glabris vel pilis parcis patulis instructis,

foliis modice petiolatis oblongis vel lato-ellipticis acuminatis vel obtuso-apiculatis, basi rotundatis vel cordatis, æquilateris integerrimis vel subsinuoso-repandis, coriaceis, supra glabris nitidis subtus subcrosco-fuscescentibus (in sicco) et pube tenerrima sparse venulorumque ultimis reticulationibus tactu molliusculis, 3-5-nerviis utrinque 8-12-costatis, receptaculis axillaribus solitariis glabris involucro bilobo suffultis, cum alternis rudimento involucrato.

HAB. In Prov. Para, Brasiliæ, *Mart.!*

Multis notis cum *U. Maximiliano* congruit, sed diversum esse haud dubito.

Ramuli crassi parcis pilis inspersi, mox glabri læves stipularum cicatrice circulari. *Petioli* 1½-4½ cent., *folia* 9-25 cent. longa, 6-11 lata, forma varia, majora oblonga breviter acuminata, basi rotundata vel in aliis exemplaribus plane cordata, minora lato- imo obovato-elliptica obtuso-apiculata; costæ ante margines confluentes, anastomoses frequentes teneræ sed distinctæ, pagina superior in vetustioribus prorsus lævigata nitida glabra. *Receptacula* obovato-globosa adulta glabra, ceraso paullo minora; *flores* fusci sessiles vel pedicellati; *achenia* obovata pallida.

21. U. *cystopodum*, n. sp.; petiolis brevissimis semitereti-concavatis, crassis transverse fissis ramulisque pilis parcis inspersis, foliis elongato-oblongis subabrupte acuminatis, basi rotundatis, integerrimis, subsinuoso-repandulis, coriaceis, supra nitidis lævissimis, in nervo pilis tenerrimis subinspersis, subtus pubere tenerrima, subtomentellis, costis subpatulis supra sulcatis, subtus prominentibus utrinque 18-20 simplicibus ad margines subconfluentibus, receptaculis axillaribus solitariis cum alterius rudimento? sessilibus?

HAB. In silvis Prov. Paræ, Brasiliæ, *Martius!*

Species eximia. *Ramuli* angulati. *Petioli* dorso convexo subbisulcati 1 cent. longi. *Folia* 23-25 cent, longa, 9-10 lata, costis valde prominentibus anastomosibus transversis prominentibus punctis insignia. *Receptaculorum* primordia in axillis 2, unum globosum *bracteis* latis parvis pluribus puberulis circumvallatum, alterum *involucro* calyptræformi cornuto sericeo-pubescente tectum.

22. U. *Saussureanum.* (Ficus Saussureana, *DC. in Mém. de Soc. Nat. de Genève, tom. IX, p.* 1, *cum tab.* Galoglychia Sauss., *Gasparini Ric. p.* 85.)

Hab. Americ. Merid.—Col. in Hortis. Botan.

23. U. *galactophorum.* (Ficus gal. *Tenore.* Galoglychia Tenoreana, *Gasp. Ric. l. c.*)

Hab. Americ. Merid.

24. U. *princeps.* (Ficus princeps, *Kth. et Bouch. l. c. p.* 14. Ficus Brasiliensis, *Cels. in Desf. Cat. n.* 3. *p.* 412. *Spreng. Syst. Veget. tom. III. p.* 783. *haud Link. Enum. II. p.* 149. Ficus longifolia, *Schott, ibid. tom. IV. App. p.* 409.) Foliis longe petiolatis vel longo-lanceolatis vel obovato-oblongis attenuato-acuminatis versus basin longe cuneatis, ima basi rotundatis crasse coriaceis integerrimis supra glabris lævibus, costulis obsoletis subimmersis utrinque circiter 12-16 subpatulis subtus sparse pilosis, receptaculis pedunculatis axillaribus parvis cum involucro bilobo glabris.

Hab. Brasiliam, *Schott!* Colitur in H. berol. sub nomine *F. Brassii* et *F. Murrayanæ.*

Petioli longi plano-compressi. *Folii* ex cl. K. 15 pollicaria et longiora. *Pedunculus* 1 cent. longus tenuis. *Receptaculum* nunc pisi magni; pariete tenui fragili.

Obs.—Cl. Kunth (*l. c. p.* 18) speciem Linkianam cum *F. adhatodofolia,* Schott, conjungit, ambasque ad *F. oblongatam,* Link. Enum. l. c. dicut.

25. U. *catappæfolium.* (Ficus catappæfolia, *Kth. et Bouché! l. c. p.* 14. F. Schottii, *Hort. berol.* F. species, e Martinica, *Hort. Paris.*) "Glabra; ramulis rectiusculis, teretibus; foliis brevissime petiolatis, obovato-oblongis apice rotundato-obtusis; inferne subcuneato-angustatis, una basi rotundato-cordatis, integerrimis, nervis primariis remotis costaque subtus convexo-prominentibus, coriaceis, epunctatis, gemmis terminalibus conico-acuminatis; receptaculis . . . . ?

Hab. Martinicam.

Folia 12-14 poll. longa, 5½-6 lata.

26. U. *Neumanni.* (Ficus Neumanni, *Cels. Kth. l. c. p.* 14. F. rigida, *Desf. Cat. ed.* 3. *p.* 412.) "Glabra; ramulis rectiusculis obsolete trigonis; foliis petiolatis elongato-oblongis acutis vel subacuminatis, basi rotundatis, levissime cordatis et triplinerviis, integerrimis, subundatis, coriaceis, nervis primariis remotis costaque subtus convexo-prominentibus, pellucido-reticulatis et punctulatis, opacis; gemmis terminalibus conico-subulatis; receptaculis . . . ."

HAB. Col. in H. Amstelod.

Folia pedalia et longiora, 1½ poll. lata. *Petioli* 3-4 pollic.

27. U. *ferrugineum.* (Ficus ferruginea, *Desf. Cat. ed.* 3. *p.* 412. F. fulva, *H. berol. teste Kunth. l. c., nec. Spr. nec Blume.*) "Ramulis rectis teretibus, petiolis gemmisque terminalibus ferrugineo-villoso-pilosis; foliis elongato-subobovato-oblongis acuminatis, ima basi rotundatis, interdum subcordatis, 3-7-plinerviis, integerrimis, nervis primariis remotis costaque subtus convexo-prominentibus, coriaceis, supra nitidis, utrinque præsertim subtus pilosis, in rete pellucido-punctulatis, receptaculis . . . ."

HAB. Verisim. in Amer. calidiora. Species spectabilis, in Hortis haud rara.

28. U. *Paraense,* n. sp.; "ramis glabriusculis, foliis modice petiolatis oblongis vel obovato-oblongis abrupte breviter acute acuminatis, basi acutis vel rotundatis, integerrimis, supra saturate viridibus nitidis, subtus fuscescentibus utrinque glabris et lævissimis, basi trinerviis et utrinque 10-12-costulatis, costulis tenuibus patulis venulisque teneris interpositis prominulis et crebro obsolete reticulatis, receptaculis brevissime pedunculatis globosis, basi involucro bilobo, glabris, ore prominulo bracteis connatis clausa, rima transversa opertis.

HAB. In Prov. Para Brasiliæ, *Mart.!* Guyana Anglica, *Parker!*

Petioli tenues 1-2 cent. longi. *Folia* 13-16 cent. longa, 5-6½ lata, majora oblonga, minora obovato-oblongo. *Receptacula* 1 cent. in diametro, pariete tenui fragili, intus fl. fuscis coriaceis obducto, qui in *U. galactophoro* a cl. *Gasparinio* delineatis admodum similes. *Perig. fem.* vel longo pedicello vel abbreviato. *Ovario* obovato. *Stylo* brevissimo. *Stigmate* carnoso vix toto exserto obliquo oblongo muriculato, sæpe calyptratim reflexo, sed semper irregulari. *Achenia* albido oblonga subæquilatera, ea florum sessilium immediate parieti receptaculi inserta, crustacea. *Fl. masc.* vidi unum, sed læsum; *stamen* 1 videtur.

Sp. Guianense magis luxurians. *Petiolis* 1½-3. *Foliis* 16-20 cent. longis, obovato-oblongis, abrupte suboblique acuminatis, costulis utrinque 15-20, receptaculis axillaribus vel ad axillas defoliatas sæpe geminis brevissime pedunculatis, ore *bracteis* 2 concavis prominulis valvatim conniventibus crassis duris hemisphæræ ad speciem operculatis. *Stigmata* juniora lanceolato-oblonga concavo-sulcata carnosa, mox dilatata et calyptratim fere reflexa, vix exserta.

29. U. *crassininervium.* (Ficus crassinervia, *Desfont. Hort. Paris.*)

HAB. Jamaicam, *M'Fadyen!* herb. Hook.

OBS. Num huc *Ficus citrifolia,* Lam. Encyclop. II. p. 494? haud Vahl Enum. II. p. 183. (Conf. Annot. ad *U. leucostictum.*)

30. V. *Syringæfolium.* (Ficus Syringæfolia, *Kth. et Bouché, l. c. p.* 15. F. cordata, *Hort. berol.* 1840.) "Glabra; ramulis rectis, teretiusculis; foliis ovatis vel ovato-oblongis breviter acuminatis, cordatis, subquinquenerviis, margine integerrimo subnudatis, subherbaceis, nervis primariis remotis costaque subtus prominentibus, pellucido-punctulatis; gemmis terminalibus conico-acuminatis curvatis, receptaculis . . . ."

HAB. Caracas, *Moritz.*

"*Folia* 4½-8 poll. longa, 3-4 lata. *Petioli* 2-2½ poll. longi."

31. U. *leucostictum.* (? Ficus lentiginosa, *Vahl, Enum. II. p.* 183. nisi eadem, certo valde affinis, excl. Syn. Plum.) Glabrum, foliis modice petiolatis ovato-, vel elliptico-oblongis obtuso-apiculatis, basi rotundatis, truncatisve, integerrimis, æquilateris, trinerviis et utrinque 7-9-costatis, lævissimis et glaberrimis, petiolio nervoque medio subtus

coloratis receptaculis axillaribus geminis et solitariis breviter pedunculatis globosis ramulisque albo-maculatis.

HAB. Demerara, *Parker!* in herb. Hook.

Ad hanc referre vellem *Fic. folio citri acutiore fructu viridi Plum. Icon. t.* 131. *f.* 3. a *Vahlio* ad *F. citrifoliam, Lam. Enc. II. p.* 494 relatam. Ramuli scil partem superiorem, ubi folia vulgo elliptica et recept. solitaria, satis recte refert. Speciem autem Lam. ad meam, cujus folia "cordato-ovato" haud dicenda, non referrem. Ipse etiam *Vahlius* specimina quæ ipse videt haud recte ad sp. Lam. retulit, nam hæc folia utrinque glabra, nec subtus villosa obfert.

Ex Parkeri adnot. hæc addo: "Arbor satis alta ramis erectis subdependentibus. Rami validi subtrigoni flexuosi subcinerei maculis oblongis albis. Petiolus pollicaris depressus striato-canaliculatus; costa media colorata, nervi colorati prominentes; folia subtus pallidiora. Receptacula gemina immatura angulato-globosa laxe calyculata umbilico conico, immatura punctis albidis conspersa. Pedunculi validi breves subsemiteretes."

Petioli 2½-3½ cent., *folia* 12-22 cent. longa, 7-11 lata, costis erecto-patulis, bifidis ramosis anastomosantibus. *Stipulæ* lanceolatæ acuminatæ dorso glabriusculæ, sub lente subconspersæ, 2-2½ cent. longæ. *Pedunculi* ½ cent. longi; *involucrum* subpatelliforme bilobum basi subpuberulum? *Receptacula* 1½-2 cent. in diam., ore *bracteis* parvis crassis erecto-conniventibus clausa.

Adnat. Num cum hoc vel sequenti comparanda Ficus grandifolia, *Kth. et Bouché, l. c. p.* 18. (F. latifolia, *Hort. berol.*)? sed cujus patria haud cognita.

32. U. *glabrum.* (Ficus glabra, *Fl. flum.*) Glabrum foliis longiuscule petiolatis ovato-oblongis ovatisve acutis vel subapiculatis basi leviter cordatis, integerrimis, subcoriaceis utrinque lævibus, 5-7 nerviis et utrinque circiter 10-costatis, stipulis lanceolato-ovatis coriaceis convolutis glabriusculis apice pilosulis, receptaculis axillaribus geminis et solitariis cum alterius rudimento breviter pedunculatis globosis glabris.

HAB. Brasiliam, in "Serra d'Estrella ad Padre Corea," Oct. 1840, *Gardner!* n. 5631.)

Arbor maxima, præcedenti similis, sed notis propositis certe distincta. *Petioli* 5-9, *folia* 14-20 longa, 8½-fere 10 lata in sicco supra fuscescentia, subtus pallida costis subpatulis, versus margines valde extenuatis et confluentibus reticulatisque. *Stipulæ* 1½ cent. æquantes. *Receptaculum* ut in præced., pariete tenui.

§. 2. *Folia modicæ magnitudinis, ovata, elliptica vel oblonga, tenuiter costulata, plerisque glabra. Receptacula vulgo pedunculata.*

33. U. *fagineum.* (Ficus faginea, *Kth. et Bouch. in Ind. Sem. H. berol.* 1846, *p.* 20.) "Glabra, ramulis subflexuosis teretiusculis; foliis breviter petiolatis, elliptico-oblongis, acuminato-cuspidatis, basi obtusis vel acutiusculis, integerrimis, undulatis, nervis primariis remotis costaque subtus prominentibus, coriaceis, epunctatis, supra nitidis, gemmis terminalibus conico-acutis, rectis, receptaculis . . . ."

HAB. In Americ. calidior.? Col. in H. berol.

Folia 4½-5½ pollicaria, 22-27 lin. lata. *Petioli* 2-2½ lin.

34. U. *populneum.* (Ficus populnea, *Willd. Sp. tom. IV. p.* 1141.) Glabrum, foliis longe petiolatis ovatis vel oblongo-ovatis obtusiusculis vel obtuso-apiculatis, basi rotundatis vel leviter emarginatis 3- vel obsolete 5- nerviis venulisque utrinque 6-8, coriaceis vix reticulatis, stipulis ovato-lanceolatis convolutis glabris, receptaculis axillaribus solitariis vel geminis pedunculatis globosis glabris mox verrucosulis, involucro bilobo-truncato. (TAB. XXI. A.)

HAB. In Jamaica, *Bertero!* Antigua, *Dr. Nicholson!* in herb. Hook.

Petioli 2-6, *folia* 6-12 cent. longa, 3-6 lata. *Stipulæ* 1 cent. superantes. *Pedunculi* ½-1 cent. longa. *Receptacula* primo adspectu sæpe sessilia videntur.

Forma Mexicana.—(? Ficus padifolia, *H. B. Kth. Nov. Gen. II. p.* 47, satis quadrat.)

HAB. Acapulco Mexici, *Beechey!* in herb. Hook.

Folia brevius petiolata, summa elliptica vel oblonga acuminata basique acutiuscula, *receptacula* vulgo solitaria et *involucro* bilobo juniore subpuberulo.

TAB. XXI. A. *Urostigma populneum,* ex ins. Antigua, n. m. *a.* Fl. masc.; *b.* Stamen a facie et dorso; *c.* Fl. fem. cum bracteolis; *c. c.* Pistillum juniore æt.; *d.* Ovarium grossificatum; *e.* Ovarium cynipe tumidum; *omnes a. m.*

35. U. *lancifolium.* (Ficus lancifolia, *Hook. et Arn.! ad Beech. p.* 310.) Glabrum, foliis longe petiolatis submembranaceis lanciformibus vel ovato-lanceolatis, longe acuteque attenuato-acunatis integerrimis basi plerumque rotundatis trinerviis et utrinque patule costiveniis, stipulis lanceolatis acuminatis coriaceis glabris convolutis, receptaculis axillaribus geminis vel solitariis pedunculatis globosis, involucro bilobo glabro.

HAB. Mexicum, *Beechey!* herb. Hook.

Petioli tenues 2-3, *folia* 7-12 cent. longa, 2-3⅓ lata. *Stipulæ* 4-8 mm. longæ.

OBS. Cum hoc conferri meretur Ficus cerasifolia, *Kth. et Bouch. l. c. p.* 16.) (F. laurifolia, *H. berol.* nec *Vahl,* F. salicifolia, *H. berol.* nec *Vahl,*) sed patria dubia.

36. U. *venustum.* (Ficus venusta, *Kth. et Bouch. l. c. p.* 16.) "Glabra; ramulis rectiusculis teretibus; foliis elliptico-oblongis abbreviato-acuminatis, basi rotundatis et subquinquenerviis, integerrimis, nervis primariis remotis, supra prominulis, subtus planis, costa supra prominula, subtus convexo-prominente, coriaceis, pellucido-punctulatis, supra nigro-viridibus et nitidulis; gemmis terminalibus subulatis, elongatis rectis; receptaculis . . . ."

HAB. Cubam, (*Ed. Ollo,* semina ad H. b. misit.)

Folia 5¾-6¾ poll. longa, 2¾-3⅓ lata. "*Petioli* 1-1½ pollicares."

37. U. *botryapioides.* Ficus botryapioides, *Kth. et Bouch. l. c. p.* 15.) "Glabra; ramulis rectiusculis; foliis longe petiolatis ovato-ellipticis vel ellipticis subacuminatis, basi rotundatis, subseptemnerviis, integerrimis, subcoriaceis, nervis primariis remotis, utrinque prominulis costa prominente, pellucido-punctulatis, supra nitidis, subtus pallidioribus; gemmis terminalibus conico-subulatis, rectiusculis, receptaculis . . . ."

HAB. Mexicum; col. in H. berol. sub *F. lævigatæ* nomine; haud *Vahl.*

Folia 2½-3½ pollicaria, 20-24 lin. lata. "*Petioli* 10-19 lin."

38. U. *lævigatum.* (Ficus lævigata, *Vahl, Enum. II. p.* 183.)

HAB. In Ind. Occid., *West.*

39. U. *angustifolium.* (? Ficus yoponensis, *Desv. in Ann. des Sc. Nat.* 1042, *p.* 308.) Glabrum, foliis longe petiolatis oblongo-lanceolatis subabrupte obtusiusculeque acuminatis, versus basin haud angustatis, ipsa basi rotundatis vel levissime emarginatis, integerrimis, marginibus subundulatis, membranaceo-coriaceis glabris et lævibus, supra profunde, subtus glauco-viridibus demum fuscescentibus, basi trinerviis et utrinque 8-12-costulatis venosisque, stipulis membranaceis lineari-lanceolatis elongatis, receptaculis axillaribus geminis et solitariis longiuscule pedunculatis obovato-globosis basi involucro bilobo suffultis, apice bracteis submembranaceis elevato-imbricatis occlusis.

HAB. In Demerara, Guyana, *Parker!* in herb. Hook.

Species quoad foliorum magnitudinem varia, 14-pedalis. *Ramuli* læves subfistulosi; *petioli* antice canaliculati basi plerumque flexuosi, 2-6 cent. longi tenues. *Folia* 10-20 cent. longa, 3-5½ lata, lateribus subparallelis, costulis tenuibus subpatulis. *Stipulæ* 2-3 cent. longæ. *Pedunculi* 1 cent. longi, *receptacula* piso paullo majora, matura ex Parkeri adnotatione atropurpurea dulcia.

Ad hanc verisimiliter pertinet *Ficus rhododendrifolia,* Kth. et Bouch. l. c. p. 16. (F. nereifolia, *Hort. berol.* 1046, F. martinicensis, *Hort. berol. nec Willd. Spec.*)

40. U. *laurifolium.* (Ficus laurifolia, *Lam. Encyclop. II. p.* 495. F. virens, *Ait. Hort. Kew, IV. p.* 351. F. Indica, maxima, *Sloane, Hist. II. p.* 140. *tab.* 223.

HAB. Americam calidiorem.

41. U. *Schiedeanum.* (Ficus prinoides, *Schlechtend. ad pl. Schred. et Deppe in Linnæa, VI. p.* 357, *haud Willd.*) Glabrum, foliis modice petiolatis oblongo-lanceolatis lanceolatisque, obtuso-acuminatis, basi acutis integerrimis subcoriaceis subtus pallidis tenere reticulatis, supra saturate

viridibus et demum punctulatis, subtrinerviis et crebro patulo-venulosis, receptaculis axillaribus solitariis breviter pedunculatis obovatis, ore contracto prominulo hiante.

Hab. Mexicum, *Sch. et Deppe!* n. 1116.

Petioli 1-1½, *folia* 6-7 cent. longa, 2 in medio lata, margine lævi leviter incurva. *Stipulæ* ovato-lanceolatæ acuminatæ parvæ. *Receptaculis* ab U. prinoide distinguitur.

Observ. Cum hoc comparanda *Ficus ligustrina,* Kth. et Bouché, l. c. p. 16, ex Carracas (F. Moritziana, *Hort. berol.*)

42. U. *erythrostictum*, n. sp. Glabrum foliis modice petiolatis ellipticis oblongisve longiuscule acuminatis, basi acutis vel subcuneatis margine lævi incurvo integerrimis coriaceis nitidis patule costiveniis subtus tenerrime reticulatis, supra punctulatis, receptaculis axillaribus solitariis breviter pedunculatis obovato-globosis maturis fulvis rubro-maculatis, involucro bilobo.

Hab. In Demerara, *Parker!*

Petioli -2 cent. *folia* 7-10 longa, 3-4 lata, costulis utrinque 8-10, e basi nullis. *Stipulæ* ½ cent., lanceolato-lineares. *Pedunculi* 3-5 mm. longi.

Var. foliis latioribus, pedunculis longioribus (ibidem).

43. U. prinoides. (Ficus prinoides, *Willd. Sp. IV. p.* 114. *H. B. K. Nov. gen. II. p.* 48. *Enum. tom. IV. p.* 381.) Glabrum, foliis modice petiolatis oblongo-lanceolatis vel elliptico-oblongis acutiusculis coriaceis supra punctulatis, pluricostiveniis, vix basi subtrinerviis, stipulis lineari-lanceolatis parvis glabris, receptaculis axillaribus geminis breviter pedunculatis (pedunculo juniore puberulo) deflexis globosis, involucro bilobo.

Hab. In Nova Granada, *Goudot!* in Herb. Hook.)

Petioli 1, *folia* 6-9 cent. longa, 2-fere 3-lata, utrinque viridia. *Receptacula* ore bracteis 2-3 latis arcte imbricatis membranaceis occlusa.

Hab. *Forma* foliis paulo latioribus Guyanam Angl. *Schomb.!* 1835! Herb. Hook.

44. U. *pedunculatum*. (Ficus pedunculata, *Ait. Hort. Kew.*

III. p. 450. *Vahl. Enum. II. p.* 185. *?Pluckn. Alm. tab.* 178. *fig.* 4.)

Hab. Americam.

A præcedentibus satis differre videtur. Inter præcedentia forsan etiam collocanda: Ficus complicata, *H. B. K. Nov. Gen. II. p.* 48, stirps Mexicana.

45. U. *cestrifolium.* (Ficus cestrifolia, *Schott. in Spr. Syst. Veg. Add. p.* 409.) Glabrum, foliis modice petiolatis ellipticis vel lanceolato-ellipticis breviter obtusiusculeque acuminatis, basi acutis vel obtusis vulgo inæquilateris, supra petiolum leviter emarginatis, utrinque punctulatis subtus pallidis, trinerviis venulisque distinctioribus utrinque 6-8, gemma terminali conico-acuta glabra, receptaculis axillaribus breviter pedunculatis solitariis vel geminis globosis involucro bilobo.

Hab. Brasiliam, *Schott;* Parahim, *Gardner!* n. 2727. "a large tree."

Petioli ½, *folia* 6-8 cent. longa, 2½-3½ lata. *Receptacula* pisi magn. (Conf. *Kth. l. c. p.* 16.)

Forma major, foliis 6-12 cent. longis. In sylvis aboriginalibus Paracensibus, *Martius!*

Num hujus loci, fortassis synonymum, *Ficus arbutifolia,* Link Enum. II. p. 450. Kth. l. c. p. 19. (F. tenebrata, *H. berol. haud Willd.* F. microcarpa, *H. berol. haud Vahl?*)

46. U. *amazonicum,* n. sp.; glabrum, foliis modice petiolatis ellipticis vel subovato-ellipticis acuminatis, acumine obtuso vel acuto, basi rotundatis vel leviter cordatis integerrimis subcoriaceis glabris lævibus supra nitidis subtus pallido-fuscescentibus (in sicco), trinerviis et utrinque 6-9-costulatis, receptaculis axillaribus geminis pedunculatis glabris basi involucro repando-truncato suffultis.

Hab. In sylvis secus *fl. Amazonum, Prov. Rio Negro* passim, in Sept.—Nov. *Mart.!*

Ab U. *erythrosticto* differt foliis basi constanter rotundatis et leviter cordatis, iisque majoribus; alioquin valde affine. *Petioli* 1-3 cent. longi. *Folia* 8-11 longa, 3 -fere 6 lata, supra in sicca atrofusca costis prominentibus, subtus fuligineofuscescentia subnitidula, costis haud crassis subpatulis ante margines conjunctis, anastomosibus nudo oculo fere obsoletis. *Pedunculi* ½ cent.; *receptacula* matura piso majora globosa lævia lutescentia apice bracteis parvis fuscis occlusa.

Cum his contribualibus sequentes quatuor species, a me nondum visæ, comparandæ

Ficus sapotæfolia, *Kth. et Bouché, l. c. p.* 17. (*F. aurantiaca* et *F. bulbosa,* Hort. berol. 1846.) Patria?

Ficus sororia, *eorund. l. c.* (*F. lævis,* Desf. Cat. ed. 3. p. 414, nec Blume, *F. elegans,* Hort. berol.) Patria?

Ficus consanguinea, *eord. l. c.* (*F. clusiæfolia,* Hort. berol. 1846 nec Schott. *F. ciliolosa, vera,* Hort. berol. 1846 nec Link.) Patria?

Ficus periplocæfolia, *eorund. l. c.*—America calidior?

Hoc etiam, *U. clusiæfolia* affinis, *Ficus obtusifolia,* H. B. K. Nov. Gen. II. p. 49. haud *Roxb. fl. Ind.*—Mexicum.

47. U. *subtriplinervium.* (Ficus subtriplinervia, *Mart. Herb. Brasil,* n. 584! cf. *Flora Ratisb.* 1841. *Beibl. II. p.* 67).—Præcedenti simile, sed folia minora, 4½-5 cent. longa, 1½-2 lata.

Hab. Brasiliam, in sylvis Amazonicis, nec non in depressioribus sylvis Caa-apoam, *Prov. Minarum, Mart.!*

Forma major; an species? Folia majora, elliptica vel sublanceolato-elliptica, venulosa et e basi trinervia, 6-8 cent. longa, 2½-4½ lata.

Hab. *Goyaz.* A large wide spreading tree. *Gardner!*

Ab his haud longe distans videtur *Ficus frangulina,* Kth. et Bouch. Ind. Sem. H. ber. 1846, p. 19.

48. U. *organense,* n. sp.; ramis glabris, ramulis, petiolis, stipulis, receptaculis involucro exteriore deciduo pubescentibus, foliis modice petiolatis præter nervum medium supra ad basin puberulum glabris ellipticis vel oblongo-lanceolatis obtusiusculis basi obtusis subcoriaceis æquilateris, majoribus basi subtrinerviis, subtus pallidis tenuiter venulosis et tenerrime reticulatis, stipulis parvis ovatis acuminatis hirtellis, receptaculis axillaribus geminis nascentibus

involucro calyptræformi acuto puberulo deciduo inclusis, sessilibus vel subsessilibus, globosis glabris involucro bilobo-subtruncato glabro.

Hab. In Brasilia, Organ Mountains. "A tree about 30 feet high growing upon the stumps of an old tree." *Gardner*, n. 620.

Petioli $\frac{1}{2}$-$1\frac{1}{2}$, folia 2-4 cent. longa, 1-$1\frac{2}{3}$ lata. *Stipulæ* $\frac{1}{2}$ cent. fere æquantes. *Receptacula* matura pisi fere magn.

Observ. *Ficus myrtifolia,* Link. Enum. II. p. 450. (*F. polita,* Hort. berol. 1846, nec Vahl) duobus præcedentibus affinis videtur.

49. U.? *sphæridiophorum,* n. sp.; glabrum, foliis brevissime petiolatis coriaceis glabris nitidis lanceolato-oblongis acutiusculis globuloque nitido fusco (sub lente puberulo) terminatis, versus basin subito inæquilateris vel obtusis e nervo medio fuscescente multi-costi-veniis, (subtusque corporibus pezizoideis versus margines regulariter dispositis) receptaculis axillaribus (geminis vel solitariis?) breviter pedunculatis globosis glabris, involucro bilobo.

Hab. Demeraram, *Parker! l. c.*

Species admodum singularis, quam certo huc haud retulissem, nisi receptacula, sed specimini tantum *adposita,* haud amplius *inserta,* omnino essent hujus generis. *Folia* 12-16 cent. longa, $4\frac{1}{2}$-5 lata.

50. U. *clusiæfolium.* (Ficus clusiæfolia, *Schott in Spreng. Syst. Neg. tom. IV. p.* 409, verisimiliter.) Partibus junioribus tenerrime puberulis, adultis plerumque glabris, foliis breviter petiolatis obovatis vel plerumque oblongo-obovatis apice lato-rotundatis versus basin angustatis vel subcuneatis, ipsa basi leviter emarginatis, margine lævi integerrimis, coriaceis, adultis integerrimis, coriaceis, adultis integerrimis, costulis patulis utrinque 8-10 tenuibus utrinque prominulis, stipulis ovatis acuminatis dorso puberulis, receptaculis geminis pedunculatis axillaribus breviter pedunculatis cum involucro bilobo junioribus tenere puberulis.

Hab. In Prov. Minarum Brasiliæ, *Martius!*

Rami mox lævigati. *Petioli* 2-5 mm. longi. *Folia* supra nitida subtus pallida, utrinque in nervo medio juniora tenera pube inspersa, costulis supra fere magis quam subtus prominulis remotius a margine conjunctis, anastomosibus creberrime minute et tenere reticulatis haud prominulis, 6-8 cent. longa, 3-4 supra medium lata. *Stipulæ* 1 cent. longæ. *Receptacula* nascentia grani piperis magnitudine pedunculum æquantia.

Var. *acutiuscula*. *Petiolus* 1½, *folia* 9 cent. longa, obovato-oblonga apice acutiuscula basi cuneata, ipsa subemarginata, 3⅔ cent. supra medium lata. *Receptacula* brevissime pedunculata obovato-globosa matura glabra 1½ cent. longa basi *involucro* bilobo, apice bracteis prominentibus clausa. Alioquin a specie nulla nota differt, quare haud separavi.

Hab. In sylvis ad Almedam, Prov. Bahia, m. Jan., *Mart.!*

52. U. *enorme*. (Ficus enormis, *Mart.! MSS.*) Foliis modice petiolatis obovatis vel oblongo-obovatis apice lato-rotundatis vel obtuso-apiculatis, basi attenuata truncatis vel supra petiolum leviter emarginatis, æquilateris integerrimis tri-vel subquintuplinerviis et utrinque venulis costalibus 4-6 subpatulis remotius a margine bifidis arcuatim conjunctis subtus vix ramulosis tenuibus albicantibus (in sicco) supra cum venulis anastomosibusque magis prominulis in sicco lutescentibus, nervo medio plerumque infra apicem terminato.

Hab. In *Campo* prope prædium Parapitinga et alibi in Prov. Minarum. Sp. enorme Hipparenda Pauli, *Mart.!*

Petioli ½-2 cent., *folia* 6-10 cent. longa, 3-5½ lata, supra nitida. Præcedenti nimis forsan affine, sed foliis latioribus, basi evidentius trinerviis, colore nervorum constantia distinctum.

53. U. *fagifolium*, n. sp.; ramis glabris stipulorum cicatricibus annulatis, foliis densis breviter petiolatis ellipticis obtusiusculis vel obtuso-apiculatis, basi obtusis vel leviter emarginatis integerrimis, membranaceo-coriaceis, præsertim

subtus fuscescenti-nitidis quinquenerviis et utrinque 5-7-costatis, costis patulo-erectis, adultis glabris, nascentibus præsertim subtus in nervis appresse hirtis, ramulis nascentibus, petiolis receptaculorum involucris externis stipulisque villosis.

Hab. In ripa canalis Tagipurn, Prov. Paraensis Brasiliæ, *Martius!*

Species distinctissima. *Petioli* 1-1½ cent., *folia* 9-11½ longa, 4½-5½ lata, costis patule adscendentibus crassis subtus prominentibus ad margines confluentibus anastomosibus obsoletis serius tantum quidquam prominulis. *Stipulæ* lanceolatæ 1 cent. haud æquantes villosæ. *Receptacula* nascentia germina axillaria gemmæformia, involucri phyllis extimis (ut in congeneribus deciduis) dense villosis parvis.

54. U. *fuligineum*, n. sp.; ramis glabris ramulis petiolis receptaculis foliisque subtus molliter hirtello-pubescentibus postea sparsim glabrescentibus, foliis densis breviter petiolatis ellipticis vel obovato ellipticis obtusis vel obtuso-apiculatis basi acutiusculis vel rotundatis, integerrimis, coriaceis, supra in nervis subhirtellis demum subglabratis, subtrinerviis et utrinque circiter 4-costulatis, nervis omnibus subtus fere obtectis, receptaculis axillaribus geminis brevissime pedunculatis, involucro sub bilobo vel irregulariter truncato sustentis.

Hab. Brasiliam, *Gardner*, n. 822! in herb. Hook.

Arbor magna. *Rami* cortice subfuscescenti lævi plicato. *Folia* in ramulis densa in sicco supra atrofusca, subtus fuligineo-hirta, costulis supra subdistinctis, subtus immersis, 4½-6½ cent. longa, 2-3½ lata, *petiolis* ½ cent. propemodum longis. *Stipulæ* ovatæ acutæ in gemmam ovato-conicam sericeo-hirtellam imbricato-convolutæ ½ cent. paullo superantes. *Receptacula* piso paullo majora patentim hirtella, ore *bracteis* 2 oppositis latis glabris aliis bracteas includentibus valvatim obvallato, basi *involucro* cum pedunculo (2 mm.) parce piloso, vulgo irregulariter truncato.

55. U. *Hartwegii*, n. sp.; ramulis petiolis stipularum dorso foliisque junioribus in nervo medio hirtulis, foliis modice

petiolatis obovato-ellipticis vel elliptico-oblongis apice rotundatis vel obtuso-apiculatis, basi obtusis vel leviter emarginatis, integerrimis vel obsoletissime repandis, coriaceis, nascentibus supra pilis fugacibus teneris inspersis, basi trinerviis et utrinque costulis 5-7 subpatulis subtus cum venulis crebrioribus prominentibus, receptaculis axillaribus geminis? sessilibus involucro vulgo 4-lobo basi hirto inæquali cinctis, glabriusculis, ore bractea lata occluso.

HAB. Columbiam, Hartweg. n, 1384! in herb. Hook.; Goyaz Brasiliæ, *Gardner*, n. 3425!

Rami lævigati. *Petioli* 1-2½ cent. longi. *Folia* in sicco supra profunde subtus pallide fuscescentia, 7-10 cent. longa, 3-5½ supra medium lata, supra nervo medio canaliculato costulisque notata. *Stipulæ* 1½ cent. longæ ovato-lanceolatæ, apice tereti-convolutæ, versus basin et dorso hirtæ. *Receptacula* adhuc juniora, piso paullo minora, pilis teneris inspersa, ore *bractea* lata occluso, pariete tenui fragili.

In sp. *Gardneriano*, pili setulosi sparsi in petiolis foliisque junioribus subtus in nervo, frequentiores, stipulæ pilis dense obtectæ, *folia* majora, usque ad 16 cent. longa, 8 lata utrinque 8-costata. *Receptacula* glabra obovato-globosa, 1 cent. æquantia, basi *involucro* bilobo instructa, apice bracteis 2 majusculis occlusa. Arbor parva, ex Gardn.

56. U. *gardeniæfolium.* (Ficus gardeniæfolia, *Hort. berol.* 1846. F. panduræfolia, *Hort. Paris,* 1846. F. puberula, *Kth. et Bouch. l. c. p.* 19.) Ramulis rectis, subtrigono-teretiusculis, juvenilibus petiolis gemmisque terminalibus puberulis; his conico-subulatis, rectis; foliis elliptico-oblongis acutis vel obtusis, basi rotundatis, trinerviis, integerrimis, nervis primariis tenuibus, remotis costaque supra prominulis, subtus prominentibus, rigidulo-membranaceis, pellucido-punctulatis, supra satiate viridibus nitidulis, utrinque præsertim subtus in costa et nervis puberulis, receptaculis.

HAB. Brasiliam.

Folia 2½-3 pollicaria, 14-17 lin. lata. *Petioli* 7-10 lin. Variat foliis glabrioribus.

57. U. *Salzmannianum*, n. sp.; glabrum, ramulis abbreviatis patentibus folii- et receptaculi-feris, foliis brevissime petiolatis obovato- vel lato-ellipticis obtusis vel obtuso-apiculatis, basi acutis vel obtusis integerrimis subcoriaceis lævibus nitidis, subtus (in sicco) fuscescentibus, subtrinerviis venulisque utrinque 4-6, receptaculis axillaribus geminis breviter pedunculatis globosis, involucro obsolete bilobo.

HAB. Bahiæ in collibus, *Salz.!* sub *F. bensaminea.*

Species distinctissima. *Petioli* 2-3 mm., *folia* 4-4½ cent. longa, vulgo fere 3 lata.

58. U. *Tweedianum*, n. sp.; glabrum, foliis modice petiolatis lato-ellipticis obtusis vel rotundatis, basi obtusis vel nonnihil protractis, æquilateris, integerrimis coriaceis lævissimis subtrinerviis et utrinque venulis distinctioribus 4-5, stipulis coriaceis triangulari ovatis acuminatis, receptaculis axillaribus geminis breviter pedunculatis depresso-globosis, involucro bilobo. (TAB. XXI. B.)

HAB. Oras Lagoæ d. Loo Polos, *Tweedie!* in herb. Hook.

Arbor coma extensa umbellata, *U. rubro* et *U. terebrato* foliorum forma similis. *Petioli* ½-1 cent., *folia* 3-5½ cent. longa, 2½-3½ lata. *Stipulæ* ½ cent.

TAB. XXI. B. *Urostigma Tweedianum*, n. m.; *a* flor fem. junior, *b. c.* pistilla provectiore ætate, stigmate magis dilatato; a. m.

§ 3. *Folia modica glabra crebro-pennivenia; recept. axill. sessilia vel ad axillas defoliatas conglomerata et pedunculata.*

59. U. *geminum*. (Ficus gemina, *Fl. Peruv.*) Glabrum, foliis modice petiolatis lanceolato-ovatis ellipticis sublanceolatisque subcoriaceis modice vel breviter acuminatis, basi rotundatis vel obtusis integerrimis, costulis utrinque 8-12 patulis, 1-2 utrinque e basi, omnibus ante margines confluentibus haud reticulatis capillaribus, receptaculis axilla-

ribus brevissime pedunculatis geminis globosis involucro bilobo.

Hab. Peruviam, *Ruiz.!* in herb. Lamb. nunc. Mart.

Petioli 1-1½, *folia* 8-10 cent. longa, 4-3 lata.

60. U. *pertusum.* (Ficus pertusa, *L. Suppl. p.* 442. Ficus Americana, *Aub. Guian. II. p.* 952.—*Swartz. Fl. Ind. Occ. III.* satis quadrat.—*Plum. Icon. ad Burman. tab.* 132. *fig.* 2. foliis tantum paulo latioribus diversa, huc tamen referenda.) Foliis breviuscule petiolatis crasse coriaceis oblongo- vel obovato-ellipticis sublanceolatisque obtuse apiculatis, basi acutis, margine lævi incurvo, venulis numerosis patulis ante marginem unitis utrinque prominulis subtus tenerrime reticulatis, receptaculis ad ramos ramulosque confertissimis geminis aut sæpe supra ramulos aphyllos abbreviatos tuberculiformes fasciculatis brevissime pedunculatis obovato-globosis ore concavo, involucro bilobo.

Hab. Ind. occid. et Guyanam; Demeraram, *Parker!* in herb. Hook.

Petioli ¼-1, *folia* 5-9 cent. longa, 2-3 lata. *Stipulæ* parvæ ovato-lanceolatæ. *Receptacula* in sicco lutescentia, ore fusco-nigricantia, piso minora.

Observ. *Vahl, F. pertusam* et *F. americanam* tanquam distinctas enumerat, sed ambabus *Plum. Syn,* cit addit, cum autem *F. americanæ* definitionem e *Prodr. Swartzii* tantum cognitam haberet, accurate comparare certe haud potuit.

61. U. *trigonum.* (Ficus trigona, *Linn. Suppl. p.* 441. *Plum. icon. p.* 123. *tab.* 132, *fig.* 1.)

Hab. Surinam.

An *U. erythrostictum?*

62. U. *casapiense,* n. sp.; foliis modice petiolatis oblongo-lanceolatis subacuminatim acutis, basi obtusis vel leviter emarginatis, æquilateris integerrimis, crasse coriaceis, supra glabris lævibus, subtus petioloque pilis teneris inspersis et glandulosis, venis costalibus pluribus venulisque tenuibus ante marginem conjunctis pluribus subpatulis, stipulis ovato-lanceolatis acuminatis convolutis puberulis

basi dorsoque sericeo-hirtis, receptaculis axillaribus geminis sessilibus, basi involucro diphyllo (vel bilobo) dorso hirto stipulisque diutius persistentibus cinctis, globosis glabris versus apicem subsulcatis, ore bracteis connatis, una superiore obtegente glabris obtecto, vix prominulo.

Hab. Peruviam: Casapi, *Mathews!* in herb. Hook.

Rami cortice lævigati, stipularum cicatrice circulari annulati. *Petioli* subsemiteretes antice profunde canaliculati, 2-2½ cent. longi. *Folia* in sicco utrinque subtus pallidius fuscescentia, nervo medio crasso subtus semitereti-prominente venis costalibus pro genere tenuibus insignia 10-13 cent. longa, 4-4½ lata. *Receptacula* piso paullo majora, primo adspectu videntur *involucro* 4-phyllo uncta, sed phylla duo majora stipulæ sunt diutius persistentes.

63. U. *Mathewsii*, n. sp.; glabrum, foliis breviter petiolatis lanceolatis vel elliptico-lanceolatis breviter acuminatis vel obtuso-apiculatis, basi obtusis vel subrotundatis, integerrimis plerumque æquilateris, e nervo medio crasso tenere et patule multiveniis, venulis ante marginem conjunctis aliisque tenerrimis subtus distinctis, utrinque glanduloso-punctatis lævibus, receptaculis axillaribus geminis breviter pedunculatis basi involucro bilobo suffultis, cum pedunculis tenerrima pube inspersis mox glabris.

Hab. Peruviam, *Matthews!* n. 2059.

Præcedenti quoad folia simillimum, sed receptaculis distinctissimum licet foliis minoribus etiam diagnoscendum. *Petioli* in sicco fuscescentes quasi glandulosi semiteretes antice sulcati ½cent. longi. *Folia* in sicco utrinque fuscescentia, subtus pallidiora venulis venulisque capillaribus striata, supra æquabilia lævissima nitida, 6-8 cent. longa, 2½-fere 3 lata. *Stipulæ* coriaceæ ovato-lanceolatæ convolutæ glabræ deciduæ, ½ cent, paullo superantes. *Receptacula* plerisque gemina pedunculis aliquot saltem millimetro longis in *involucrum* bilobum expansis, sustenta, globosa, grani coriandri magnitudine, parieti tenui fragili. *Flores* fere ut in præced.

§. 4. *Species dubiæ, ad hoc genus pro majore parte equidem referendæ, steriles tantum observatæ, supra arborum truncos* *repentes, foliis sæpe dimorphis. Inter has fortassis latent juveniles formæ specierum in præcedentibus descriptarum. Num eadem species mox arborescens mox supra arbores serpens.*

64. U. *atrox.* (Ficus atrox, *Martius! herb.*) Foliis ovatis acutiusculis æquilateris basi profunde cordatis: lobis conniventibus, integerrimis, membranaceis novem nerviis, subtus in nervis pubescentibus, petiolo breviusculo subpeltatim insertis.

HAB. In Brasilia, Rio Negro ad Porto dos Miranhao, *Mart.!*

Caulis repens foliis alternato-distichis ovatis obtusiusculis profunde cordatis, sinu lobisque rotundatis (4-4½ cent. longa); *Thæwugh* incol.; a veneficis venenum *Urari* adhibetur.

65. U. *glanduliferum*, n. sp.; ramulis repentibus quam tenerrime appresse puberulis, foliis (ramulorum) alternis brevissime petiolatis elliptico- vel ovato-lanceolatis obtusiusculis vel emarginatis, integerrimis sursum repandulo-denticulatis membranaceis glabris subtus fuscescentibus et versus margines glanduliferis.

HAB. In Brasilia, in arborum truncis per sylvas æternas variis locis in Prov. St. Pauli, Minarum et Rio Janeiro, *Mart.!*

Folia 2½-3 cent. longa, ⅔-1 lata, subæquilatera, sub lente tenuiter venuloso-reticulata.

66. U.? *infestum*, n. sp.; ramis ramulisque tenuibus repentibus radicantibus foliisque præsertim supra parce puberulis glabrescentibus, ramorum ovatis vel ovato-ellipticis obtusissimis basi leviter cordatis, ramulinis ellipticis vel lanceolato-ellipticis utrinque obtusissimis vel basi parumper emarginatis, omnibus tenere venulosis subtus ad margines fuscescentibus, parce glandulosis.

HAB. In Brasilia: St. Catherina supra arbores repens, *Gardner!* Brasilia merid., *Tweedie*, n. 598! in herb. Hook.

Teste *cl. Tweedie* altissimas arbores adscendit. *Folia ramorum* 1-2 cent. longa, *ramulorum* haud longiora et forma tantum diversa. Haud procul distat ab *U. glandulifero.*

OBS. *Ficus scandens,* Lam. Encycl. II. p. 498. Vahl, Enum. II.

p. 184, certo ad hanc cohortem referenda; num præcedenti annumeranda?

Species ex genere forsan excludenda:

Ficus maculata, *Linn. Sp. Pl. p.* 1515. *Vahl, Enum. II. p.* 198. *Ficus castaneæ folio,* Plum. Icon. tab. 131. fig. 1, a Thunbergio male ad *Covelliam hispidam* relata.

B. SPECIES AFRICANÆ (*incl.* ins. MASCARHENIS *et parte occid.* ARABIÆ), quarum pleræque *americanis* accedunt *foliorum* forma, et *receptaculorum* etiam in quibusdam pedunculatorum *bracteis* in *involucrum* tri- vel et sub-bilobum connatis.

§ 1. ***Folia ampla vel majuscula basi plus minus cordata; recept. pedunculata, involucro 3-2-lobo subtruncato.***

67. U. *abutilifolium*, n. sp.; foliis longe petiolatis rotundato-cordatis subobtuse apiculatis æquilateris, lobis baseos amplis et conniventibus, coriaceis, supra glabriusculis demum glabris, subtus molliter subincano-pubescentibus, quinquenerviis et utrinque circiter 6-costatis, integerrimis, receptaculis axillaribus pedunculatis obovatis basi attenuata involucro truncato marginatis, junioribus pubescentibus, adultis glabris lævibus.

HAB. Regnum Fazokel, *Kotschy*, n. 462!; Macalisberg, Africæ merid. subtrop. *Burke!* in herb. Hook.

Petioli 2 cent. longi glabriusculi. *Folia* 17-21½ cent. longa, 17-20 lata. *Pedunculi* 1 cent. fere æquantes; *receptacula* 1½-2 cent. longa.

Sp. Afr. merid. foliis subtus glabrioribus differt. *Stipulæ* magnæ lato-oblongæ convolutæ membranaceæ. Ramulorum cortex in sicco lutescens, stipulam cicatricibus annulato-marginatus.

68. U. *catalpæfolium*, n. sp.; foliis longe petiolatis rotundato-cordatis attenuato-subacuminatis, acumine subobliquo obtusiusculo, lobis baseos plerumque subæqualibus sinu separatis, coriaceis utrinque glabris integerrimis, novem- vel undecim-nerviis et utrinque 4-5-costatis, receptaculis

pedunculatis geminis subglobosis glabris, involucro baseos 3-lobo?

HAB. Regnum Sennar, circa Resaes et ad ripas Nili cœrulei, *Kotschy*, n. 415!

Folia 12-18 cent. longa, 10½-16 lata, aliquando subrepandula, nervis utrinque prominentibus. *Receptacula* 1 cent. fere crassa.

69. U. *populifolium.* (Ficus religiosa, *Forsk. Arab. p.* 180, *haud Linn.* (Ficus populifolia, *Vahl, Symb. I. p.* 82. *Tab. XXII. Enum. II. p.* 181.) Foliis longe petiolatis rotundato-cordatis abrupte acuminatis vel obtusis coriaceis utrinque glabris, integerrimis, 5-nerviis et utrinque circiter 10-12 costatis, stipulis ovato-lanceolatis convolutis glaberrimis, receptaculis axillaribus vel ad axillas defoliatas plerumque geminis pedunculatis globosis glabris vel nascentibus tenere puberulis basi involucro repando subtrilobulato suffultis.

HAB. In Arabia, *Forsk.;* in præruptis montium secus fluvium Tacazo, *Schimper*, St. Abyss. II. n. 880!

Vahlii descriptio congruit. *Petioli* 5-7, folia 8-9 cent. longa, 7-9 lata. *Stipulæ* 2 cent. longæ. *Pedunculi* 1-1½ cent. teretes. *Receptacula* (juniora) 5 mm. in diem.

Ficus vassa, foliis cordato ovalibus *Forsk.* Arab. p. 179, fortassis ad hanc vel præcedentem.

70. U. *glumosum.* (Ficus glumosa, *Delil. in Ann. des Sc. Nat. l. c.*) Foliis longe petiolatis ovatis obtusis basi cordatis integerrimis trinerviis et utrinque 4-6-costatis subcoriaceis, adultis supra glabris, subtus pubescentibus, receptaculis axillaribus geminis brevissime pedunculatis vel sessilibus pubescentibus sensim glabratis, involucro trilobo-repando.

HAB. In Abyssinia, *Schimper,* Sect. III. n. 696! Nubia, *Pl. Nub.* n. 215; "arbor magna ad montes prope fl. *Tacaze*, Dec. 1839."

Folia 5½-8 cent. longa, 4-5 lata; *petioli* 2-3 cent.

71. U. *fazokelense,* n. sp.; foliis longe petiolatis oblongis

obtusiusculis vel brevi-apiculatis basi cordatis integerrimis, subcoriaceis tri-quinque nerviis et utrinque 6-8-costatis, supra glabriusculis, subtus receptaculisque dense pubescentibus, stipulis lanceolato-ellipticis acutis membranaceis margine et dorso sericeo-hirtis, receptaculis axillaribus globosis brevissime pedunculatis vel subsessilibus.

Hab. Regnum Fazokel, *Kotschy*, n. 495! et forma minor, sub n. 496.

Inter præcedentem et sequentem fere media, ab illa foliorum forma angustiore et longiore, pube densiore etc. satis distincta. *Folia* 10-13 cent. longa, 5-6 lata; *petioli* 4-6 cent. longi. *Stipulæ* 2 cent. longæ. *Receptacula* 5-10 mm. in diem.

72. U. *Kotschyanum*, n. sp.; foliis longe petiolatis oblongis vel obovato-oblongis obtusis, basi æquali leviter cordatis, integerrimis, coriaceis, trinerviis et utrinque 7-9-costatis, supra glabris, subtus petiolis pedunculisque molliter pubescentibus, receptaculis axillaribus pedunculatis geminis (vel et quaternis?) globosis, junioribus sericeo-pubescentibus, umbilico prominulo lævi, basi involucro 3-4-lobo.

Hab. Regnum Fazokel, *Kotschy*, n. 527.

Petioli 6-9 cent. sensim glabrati. *Folia* 17-22 cent. longa, 10-15 supra medium lata. *Pedunculi* 1½-2 cent. tenuiter sed dense pubescentes. *Receptacula* globosa 1-1½ cent. in diam.

73. U. *ovatum*. (Ficus ovata, *Vahl, l. c. p.* 185.)

Hab. In Guinea, *Thonning*.

74. U. *Vogelii*, Miq. in Fl. Nigrit. ined.

Hab. In ripa ad Bassa, Julio, 1841, n. 6. Arbor 20-30-pedalis. C. Palmas, n. 47! *Vogel!* Niger Exped.

75. U. *politum*. (Ficus polita, *Vahl, Enum. II. p.* 182.

Hab. Guinea, *Isert*.

76. U. *rubicundum*, Miq. in Fl. Nigrit.

Hab. Oras Africæ Occid. ad Quorra, Adda-vada, *Vogel*, n. 140! m. Sept. 1841.

77. U. *calyptratum*. (Ficus calyptrata, *Vahl, l. c. p.* 186.)

Hab. In Guinea, *Thonning*.

78. U. *ingens.* (Ficus Schimperiana, *Hochstett. Schimp. Fl. Abyss. III.* n. 1771.) Ramulis petiolisque basi, stipulis pedunculis, bracteis dorso, receptaculisque junioribus puberulis, foliis modice petiolatis oblongis vel angustato-oblongis, attenuato-obtusiusculis, basi leviter cordatis integerrimis, coriaceis, glabris, costulis utrinque circiter 12 reticulatis, stipulis parvulis ovatis convolutis rigidis, receptaculis axillaribus breviter pedunculatis globosis solitariis vel geminis?

HAB. In vallibus prope Djeladjevanna, *Schimper, l. c.*

"Arbor ingens." *Petioli* 2-2½ cent., *folia* 14 cent. longa, 5-5½ lata. Sequenti proxime cognatum.

§. 2. *Folia modica ovata vel oblonga aut lanceolata. Receptacula brevissime pedunculata vel sessilia.*

79. U. *Xanthophyllum.* Ficus Xanthophylla, *Steud. Nomen. in Schimp. Fl. Abyss. II. n.* 943.) Foliis ovato-oblongis apice attenuato-vel subacuminato-obtusiusculis, basi æquali leviter cordatis, integerrimis coriaceis utrinque glabris, costulis utrinque 7-10 patulis reticulatis, petiolis junioribus ramulisque subpuberulis, stipulis ovatis acutis parvis coriaceis convolutis tenere tomentellis, receptaculis axillaribus geminis vel solitariis brevissime pedunculatis vel sessilibus globosis glabris, basi involucro 3-lobo pubescenti sustentis.

HAB. Abyssiniam. Nomen Abyss. *Dscherantha Gihé*, Schimp.!

Sequenti, quocum ex opinione cl. Hochstetter conjungendum, affine, sed secundum Vahlii descriptionem diversum, in ejus herbario ulterius comparandum. *Petioli* 2-4, *folia* 12-15 cent. longa, 5-6½ lata.

Forma foliis magis ovatis obtuse apiculatis, adultis basi leviter cordatis, costis subtus lutescentibus magis prominentibus, in Africa merid. subtrop. ad Macalisberg, *Burke!* in herb. Hook.

80. U. *luteum.* (Ficus lutea, *Vahl, Enum. II. p.* 105.)

HAB. In Guinea, *Thonning.*

Huic vel antecedenti quam maxime affinis esse videtur: *Ficus spectabilis,* Kth. et Bouch. l. c. p. 15. (F. Africana, *Hort. berol.*) cujus patria fortassis Africa.

81. U. *Hochstetteri,* n. sp.; ramulis petiolis foliis præsertim subtus densius, receptaculis involucroque sparse puberulis, foliis breviuscule petiolatis ellipticis vel obovato-ellipticis apice protracto obtusis vel rotundatis, basi obtusis vel leviter emarginatis, integerrimis, coriaceis, supra imprimis in nervis puberulis, costulis erecto-patulis 5-8 utrinque, stipulis ovato-oblongis brevibus tomentellis, receptaculis axillaribus sessilibus solitariis vel geminis globosis demum glabratis.

HAB. In faucibus et locis humidis montium regionis *Schahagenni:* nomen Abyss. "*Afa Kamo.*" *Schimp.!* Abyss. I. pl. advers. n. 373.

Petioli ½-1 cent., *folia* 4-8 cent. longa, 2-3½ lata. *Stipulæ* vix ½ cent. *Receptacula* 8 mm. in diam.

82. U. *Schimperi.* (Ficus Schimperi, *Hochstett. in Sched. Schimp. Abyss. II. n.* 1096.) Ramulis puberulis, foliis breviuscule petiolatis ellipticis obtusis basi acutiusculis integerrimis coriaceis utrinque glabris, costulis erecto-patulis utrinque pluribus, receptaculis axillaribus plerumque solitariis sessilibus globosis glabriusculis, ore rimæformi, basi involucro trilobo puberulo ciliolato. (TAB. XXII. A.)

HAB. In montibus dit. Haramah prope Geraz Abyssiniæ, *Schimp.! l. c.,* 10 Dec. 1838.

Frutex præcedenti nimis forsan affinis. *Petioli* 1-1⅓, *folia* 5-8 cent. longa, 2⅔-4 lata. *Receptacula* 8 mm. in diam.

TAB. XXII. A. *Urost. Schimperi,* (ex Schimp. Ab. II. n. 1096.) n. m.—*a.* Bractea sub ore receptaculi; *b.* Fl. masc.; *c.* Stamina antice et postice; *d.* Fl. fem. cum bracteolis; *e.* Fl. fem. junior; *f.* Adultus; *g.* defloratus: —*a. m. omnes.*

83. U. *Burkei,* n. sp.; ramulis pubescenti-tomentellis, foliis modice petiolatis rotundato-obovatis vel lato-ellipticis apice lato-rotundatis vel obtuso-attenuatis, basi obtusis vel acu-

tiusculis, integerrimis coriaceo-membranaceis glabris, costulis utrinque 6-7 subtus reticulatis, stipulis lanceolatis ciliatis, receptaculis axillaribus brevissime pedunculatis (pedunculo puberulo) geminis et solitariis globosis junioribus deorsum puberulis, ore prominulo, basi involucro 3-partito demum circumscisso subglabro.

HAB. Macalisberg, Afr. merid. subtrop., *Burke!* in herb. Hook.

Petioli 1-2, *folia* 4-7½ cent. longa, 3-5 lata. *Receptacula* piso paullo majora.

87. U. *natalense.* (Ficus natalensis, *Kraus. Pl. Cap. n.* 276, *et in Fl. Ratisb.* 1846.) Glabrum, foliis breviuscule petiolatis obovato-ellipticis vel obovato-lanceolatis apice rotundatis vel obtuso-attenuatis, basi acutis vel cuneatis, integerrimis, rigidiuscule membranaceo-coriaceis, subtus subimmerse penniveniis, receptaculis axillaribus pedunculatis globosis glabris, involucro trilobo circumscisso.

HAB. Prom. B. Sp. ad Port Natal, *Krauss! sub n. cit. et p.* 254, in herb. Hook.)

Petioli 1-1½, *folia* 5 cent. longa, 2½-2 lata. *Receptacula* piso aliquid majora, ore mammæformi rima transversa e bracteis connatis formata instructo.

85. U. *Thunbergii.* (Ficus cordata, *Thunb. Fic. p.* 8, *cum icone bona.*) Nomen speciei minime foliorum formam indicat. Ramuli nascentes tenere puberuli. Folia modice petiolata ovato-lanceolato vel oblongo-acutata, basi rotundata leviter emarginata coriacea utrinque glabra subtus impresso-punctata, costatis utrinque 7-8 subtus reticulatis. Stipulæ lanceolatæ acuminatæ dorso pubescentes.—*Petioli* 2-3, *folia* 7-10 cent. longa, 3-4½ lata.

HAB. Prom. B. Spei, *Thunb.*, herb. Hook.

86. U. *salicifolium.* (Ficus salicifolia, *Vahl, Symb. I. p.* 82, *t.* 23, *Enum. II. p.* 195. Ficus Indica, *Forsk. Arab. p.* 179.) Ramulis junioribus densius, petiolis sparse puberulis cito glabratis, foliis longiuscule petiolatis ovato- vel oblongo-lanceolatis lanceolatisque attenuatis vel subacuminatis, apice ipso plerumque obtusiusculo raro acuto, basi rotun-

datis vel emarginatis integerrimis, coriaceis utrinque glabris, costulis venosis utrinque 10-12 reticulatis, supra punctatis, stipulis linearibus membranaceis puberulis, receptaculis axillaribus geminis subsessilibus subglobosis junioribus tenerrime puberulis sensim glabratis, involucro 3-lobo ciliolato dein circumscisso.

HAB. Sennaar, *Kotschy!* n. 257, secus torrentes in Mascate, *Auch.-Eloy!* n. 5316, arbor in declivitate Austro-Africa montis Cara, Arabiæ Felicis, 8 Dec. 1835, *Schimp.!* n. 942.

Foliorum forma variabilis. *Petioli* 1-4½ cent. longi; *folia* alia crassiora, alia magis membranacea, in *Sp. Kots.* majora ovato-lanceolata 12-14 cent. longa, 4-4½ basi lata, alia minora lanceolata. In *Sp. Auch.-El.* folia minora atque crassiora; in *Sp. Schimp.* oblongo-lanceolata acuta.

§. 3. *Folia modica. Receptacula pedunculata.*

87. U. *elegans*, Miq. in Fl. Nigritian.

HAB. Donferon, Cap Coast, *Vogel!* Nig. Exp. n. 87, m. Jul. an n. 25 eadem?

88. U. *ottoniæfolium*, Miq. in Fl. Nigrit.

HAB. Fernando Po, Nov. 1841, *Vogel!* n. 176.

89. U. *Thonningii*, Miq. in Fl. Nigrit. (Ficus microcarpa, *Vahl, Enum. II. p.* 188. *haud Linn. fil.* F. Thonningii, *Blume, in Rumphia, l. c.*)

HAB. Guinea, *Thonn.* apud Vahl, Nun, *Vogel!* n. 27.

Vahlii descriptio satis congrua, attamen in affinium complurium similitudine determinatis absque archetypo vix certa.

§. 4. *Folia longe petiolata angusta. Receptacula breviter pedunculata.*

90. U. *acrocarpum.* (Ficus acrocarpa, *Steud. in Abyss. II. n.* 627.) Foliis longe petiolatis subobovato-ellipticis apice rotundatis vel protracto-obtusiusculis raro subacutis, versus basin cuneatis integerrimis glabris supra subpunctulatis, multi-venosulis, receptaculis axillaribus geminis et solitariis breviter pedunculatis (pedunculo tenere puberulo)

globosis versus basin puberulis, involucro trilobo puberulo. (Tab. XXII. B.)

Hab. In regionibus calidioribus ad rivos prope Mai Dogale, 13 Nov. 1839, *Schimp.! l. c.*

"Arbor speciosa." *Petioli* 2-4, *folia* 4-7 cent. longa, 2-3 lata. *Pedunculi* 5-8 mm. longi, *receptacula* totidem in diam.

Var. foliis angustioribus supra punctulatis.—Ficus saligna, *Hochst. l. c. n.* 709. Arbor mediæ altitudinis in montanis prope Ferrokoba, 5 Nov. 1839, *Schimp.*

Tab. XXII. B. *U. acrocarpum,* folium et rec. nat. magn.—*a.* Fl. masc.; *b.* Stamen a dorso et latere; *f-d.* Flores fem. variæ ætatis et formæ, sessiles vel pedic.; *c.* Cum bracteolis: *a. m.*

91. U. *Dekdekena.* (Ficus Tjiela, *Hochst. in Schimp. Fl. Abyss. haud Roxb.)* Ramulis pedunculisque puberulis, foliis longiter petiolatis lanceolatis vel oblongo-lanceolatis obtusiusculis raro apice rotundatis, basi cuneatis, integerrimis, coriaceis glabris penniveniis, stipulis ovato-lanceolatis convolutis puberulis ciliatis, receptaculis axillaribus geminis in summis ramulis densissimis globosis tenerrime puberulis et glabratis, brevissime pedunculatis vel sessilibus, involucro trilobo pubescente deciduo.

Hab. In præruptis regionis mediæ australis montis Scholoda, 15 Nov. 1837, *Schimper!* Abyss. I. pl. advers. p. 220; nomen Abyss. *Dekdekena.*—Fazokel, *Kotschy!* n. 473, foliis paulo angustioribus diversum.

Præcedenti simillimum. *Petioli* 2-4 cent., *folia* 5½-12 cent. longa, 2-4 lati. *Pedunculi* 2 mm. circiter longi tomentelli vel glabrati. *Receptacula* ostiolo subrimæformi.

§. 5. *Folia pennivenia. Recept. sessilia.* (U. nitido *affines.)*

92. U. *terebratum.* (Ficus terebratum, *Willd. Sp. III. p.* 781. F. pertusa. *Bory.)*

U. *Thonningii,* et ex Asiaticis *U. nitido* et *microcarpo, cæt.* affine, distinctum foliis ellipticis obtusis vel obtuso-apiculatis, basi obtusis vel acutis, margine lævi integerrimo, venulis distinctioribus utrinque 8-10, tenerrime reticulatis, 4½-7 cent. longis, 3-4, raro 4⅓ latis; petiolis 2½ cent. longis.

HAB. In sylvis montanis Mauritii, *Bouton!* in herb. Hook.

Ad hanc forsan vel ad sequentem *Ficus pertusa,* Hort. Willd. (F. ciliolosa, *H. berol. olim.)* haud *Lin. fil.*, patria ex *Linnæi* Synonymo false indicata.

93. U. *rubrum.* (Ficus rubra, *Lam.* et F. pyrifolia, *Encycl. II. p.* 495, *Vahl. Enum. II. p.* 191 *ex cl. Rumph?* Ficus involucrata, *Lam. ?)* Foliis longiuscule petiolatis elliptico-obovatis vel obovatis obtusis vel obtuso-apiculatis, basi acutis vel cuneatis, ipsa basi supra petioli apicem minutissime excisis, glabris, venulis distinctioribus utrinque 6-8, subpunctulatis stipulis linearibus membranaceis ciliolatis, receptaculis axillaribus geminis sessilibus stipulis fere involucratis globosis, glabris, junioribus subpuberulis, basi bracteis 3 fere liberis puberulis.

HAB. In ins. Mauritii, *Bojer!* Madagascaria, *Dr. Lyall!* n. 150. in herb. Hook.

Petioli 1½-2, raro 3 cent., *folia* 4-6 cent. longa, 2-3½ lata. *Stipulæ* 1½-2 cent. longæ. *Receptacula* 5-8 mm. in diam.

94. U. *aggregatum.* (Ficus aggregata *et* punctata, *Lam. Enc. II. p.* 495, *et Vahl, Enum. II. p.* 191.)

HAB. In Ind. Or.—Stirps mihi prorsus dubia, huc propter similitudinem cum præcedentibus relata.

Species mihi nondum bene cognitæ.

Ficus glaucophylla, Desfont. Catal. p. 209, ex parte, Kth. l. c. p. 19. *F. Capensis,* Hort. berol. nec Thb. *F. cordata,* Desf. Cat. 209, (1815), nec Thb. ex cl. Kunthii descriptione, ab *U. Thunbergii* (F. cordata, *Thb. Diss. de Ficu cum icone;)* foliis longe petiolatis, eorumque forma et nervatione differre et *U. salicifolia* similior esse videtur. Quam autem in H. Amstel. sub illo nomine colimus, vera est *F. cordata,* Thb. cum icone citata congrua.

Ficus tristis, Kth. et Bouch. l. c. p. 19. *(F. atrovirens,* H. berol. *F. cordata,* Desf. Cat. 209 (1815) H. Paris. 1846 partim, nec Thb. *F. glaucophylla,* Desf., l. c. Fl. Paris, 1846, partim) ab *U. Thunbergii* diversa haud videtur, nisi folia quinquenervia dicta essent.

C. *Species* AUSTRALASICÆ, asiaticis fere conformes, sed in quibusdam *folia* subdenticulatim repanda, *receptacula* quandoque pedunculata, vel et basi in stipitem constricta. *Involucri phylla* 3 vulgo basi connata.

95. U. *macrophyllum.* (Ficus macrophylla, *Desfont. Cat. H. Par.*) Foliis modice petiolatis ovato-oblongis acutis basi subcordatis integerrimis parallele costatis coriaceis glabris, receptaculis......

HAB. Novam Hollandiam, *Desf.* Brisbane River, *Herb. Hook. !* Sp. spectabilis.

96. U. *Cunninghami*, n. sp.; glabrum, foliis modice petiolatis lato-oblongis subabrupte breviter obtusiusculeque acuminatis, basi rotundatis vel truncatis rigide coriaceis, integerrimis, costulisque utrinque circiter 8 erecto-patulis reticulatis, stipulis parvis ovatis acutis coriaceis convolutis glabris, receptaculis axillaribus geminis sessilibus globosis ore prominulo, basi bracteis 3-4 concavis.

HAB. In Nova Hollandia, Brisbane River, in densis sylvis, *All. Cunningham.* Arbor vasta 80-pedum alt. (*Hb. Hook.!*) Sequenti affinis.

Petioli ½-3 cent. longa, *folia* 10-12½ cent. longa, 4-7 lata. *Receptacula* piso majora. Siccitate lutescit.

97. U. *prolixum.* (Ficus prolixa, *Forster, Prodr. Fl. ins. Austr. p.* 77. *Guillem. in N. Ann. des Sc. Nat. t. VIII. p.* 185.) Foliis modice petiolatis coriaceis glabris oblongis vel subovato-oblongis breviter acute vel obtuse acuminatis, basi rotundatis et supra petiolum subbicallosis, integerrimis vel vetustioribus subrepando-denticulatis, costulis utrinque 6-8 erecto-patulis, receptaculis axillaribus geminis vel solitariis globosis glabris sessilibus basi 3-bracteatis, demum supra bracteas stipitato-constrictis.

HAB. In ins. Societatis, *Forst.*; Taiti, *Herb. Hook.!*

Petioli 1-3, *folia* 8-11 cent. longa, 3½-6½ lata, lævia, juniora subtus glaucescentia. *Stipulæ* ovato-acuminatæ convolutæ glabræ. *U. timorensi* propinquum. Siccatum fere nigrescit.

98. U. *psychotriæfolium*, n. sp.; glabrum, foliis modice petiolatis ellipticis vel obovato-ellipticis obtuso-apiculatis, basi acutis vel subcuneatis, subintegerrimis, coriaceis, venulis patulis utrinque 6-8 subdistinctis tenere cum tenuioribus reticulatis, stipulis ovatis acutis parvis coriaceis glabris, receptaculis axillaribus brevissime pedunculatis globosis glabris.

Hab. Ad Brisbane River, Novæ Hollandiæ, *Fraser*, 1829, n. 73. in Hb. Hook.

Petioli semiteretes antice lato-canaliculati 2 cent., *folia* 7-9 longa, 3½-4 lata. *Receptacula* ceraso minora. Prope *U. nitidum* et *affinia.*

99. U. *Fraseri*, n. sp.; glabrum, foliis modice petiolatis coriaceis ellipticis vel obovato-ellipticis abrupte longiuscule acuminatis, acumine obtusiusculo, basi acutis vel demum obtusis, versus apicem repandulis, costulis utrinque 6-8 erecto-patulis versus margines confluentibus, reticulatis prominentibus, petiolis trigonis antice sulcatis.

Hab. Ad Bremer River, Novæ Hollandiæ, *Fraser!* 1829. n. 704. in Hb. Hook.

Petioli 1½-2½, *folia* 10-8½ cent. longa, 5-4½ lata.

100. U. *rubiginosum*, *Gasparr, l. c.* (Ficus rubiginosa, *Desfont. Catal. p.* 209. Ficus australis, *Willd. Spec. IV. p.* 1138. *Ait.* Ficus ferruginea, *Hort. Liv. Botan. Magaz. Tab.* 2939. *Venten. Malmais. Tab.* 114.)

Hab. In Nova Hollandia.

101. U. *platypodum.* (Ficus platypoda, *Cunningh. MSS.* in Hb. Hook.) Glabrum vel puberulum, foliis longe vel breviter petiolatis (petiolis compresso-dilatatis) coriaceis, junioribus subtus vulgo puberulis, lato-ellipticis, quandoque subinæquilateris acutiusculis vel obtusis, adultis basi rotundatis, integerrimis, costulis venosis utrinque 10-12 distinctioribus patentibus cum tenuioribus subtus tenere reticulatis (sub lente inter reticulatiores subscrobiculatis) receptaculis axillaribus vulgo geminis breviter pedunculatis globosis adultis glabris, basi tribracteatis, bracteis puberulis circumscisse deciduis.

Hab. In Nova Hollandia, Brisbane et Hastings River, *Fraser!* forma major; York Sound, *Cunningh.!* in Hb. Hook.

Petioli Sp. prioris 4-6½ cent. longi, ⅓-½ fere lati. *Folia* parallele venosa 10-14 cent. longa, 5-8½ lata. *Stipulæ* lanceolatæ acuminatæ carinatæ coriaceæ glabræ, sursum convolutæ subrecurvæ 4 cent. longæ. *Pedunculi* ½ cent. *Receptacula* nunc piso majora.

Sp. ad York Sound lectum statura multo minus, foliis sæpe inæquilateris, receptaculis pedunculisque densius puberulis.

Forma minor glabrior, foliis 6-7 cent. longis, receptaculis plerumque solitariis, ad oram occid. Australiæ lecta a cl. *Wm. Bynoe* in Hb. Hook. Stirps variabilis petiolis præsertim distinguenda, formis americanis affinior quam asiaticis.

102. U. *puberulum*, n. sp.; ramulis petiolis foliisque subtus, pedunculis receptaculisque puberulis, foliis longiuscule petiolatis ovato-ellipticis versus apicem obtusiusculum aliquid attenuatis, basi rotundatis, patulo-costiveniis, stipulis lanceolatis convolutis longiusculis hirtello-puberulis, receptaculis geminis vel solitariis axillaribus pedunculatis obovato-globosis verrucosis, ore mammæformi 3-bracteatis, basi stipitato-constrictis bracteisque 3 parvis pubescentibus. (Tab. XXIII. A.)

Hab. Novam Hollandiam, York Sound, *Hb. Hook.!*

Petioli 2-2½ cent. longi trigoni antice sulcati. *Folia* 6½-8 cent. longa, 3½-4 lata, costulis utrinque 6-8 tenuibus venosis tenere subreticulatis. *Pedunculi* ½ cent. longi. *Receptacula* pisi vel cerasi magnitudinis cum stipite, petioli ½ long. æquantia dense puberula.

Tab. XXIII. A. *U. puberulum*. *a*. ramus fructif. et folium, n. m.; *b*. flos masc.; *c*. stamen; *d*. flos fem. defl.; et *e*. achenium; a. m.

103. U. *brachypodum*, n. sp.; ramulis petiolis foliisque subtus pedunculis bracteisque tenere puberulis, foliis breviter petiolatis (petiolis plano-compressis) elliptico-vel ovato-

lanceolatis acutiusculis, basi rotundatis vel leviter emarginatis æquilateris, coriaceis, patule costiveniis, receptaculis breviter pedunculatis solitariis vel geminis, globosis glabris, basi bracteis 3 parvis latis puberulis appressis.

HAB. In Nova Hollandia, York Sound, *Hb. Hook.!*

Petioli ½-⅔, *folia* 4½-6½ cent. longa, 2 lata. *Receptacula* pisi magn.

Petiolorum forma ad *U. platypodum* accedit.

OBSERV. Ad unam Ficum præcedentium specierum verisimiliter referenda *Ficus granatum, Forst. pl. escul. p.* 37, ex insula Tanna, quam ex authentico specimine nondum cognitam habeo.

Ficus verrucosa, Vahl, Enum. II. p. 192. (Ficus septica, *Forst. Fl. ins. Austr. p.* 76) præcedentium synonymis haud adscribenda videtur.

104. U. *obliquum.* (Ficus obliqua, *Forst. Prodr. Fl. Austr. p.* 77.) Foliis lanceolatis glaberrimis margine cartilagineis, pedunculis geminis brevissimis, calycibus caducis longitudine fructus.

HAB. In ins. Namoka et Tanna, *Forst.*

Glabritie tantum ab *U. bractypodo* differre videtur.

D. *Species* ASIATICÆ ; *receptacula* sessilia vel rarius pedunculata basi semper bracteis 3 sustenta. *Stigma* in plerisque elongatum, paucis abbreviatum.

§ 1. *Folia rigidiuscula membranacea vix coriacea cordata vel ovata glabra, marginibus undulata.*

a. *recept. sessilia, gemina vel solitaria.*

105. U. *religiosum,* Gasp. Ricerch. p. 82. (Ficus religiosa, *Linn. Roxb. l. c. p.* 347. F. superstitiosa, *Link.* Areala, *Rheede H. Malab. I. p.* 47, *Tab.* 27, *optima.* Ficus Malabar. etc. *Pluckn. Alm. p.* 144, *Tab.* 178, *fig.* 2.) Foliis longe petiolatis ovato-cordatis anguste acuminatis (acumine ⅓ folii long.) integerrimis vel sursum undulato-repandis, sinu baseos lato vel truncato.

HAB. In India Orient. Bengalia, *Hb Hook.!* Madras, *Dr. Sluter!*

Species cum affinibus sequentibus sæpe commutata, ex icone cit. Rheedei cognoscenda. Florum analysin vide apud *Gasp. l. c. p.* 93. *Tab. VII. fig.* 1—5.

OBSERV. F. religiosa, Linn. Zeyl. 372, vix eadem ac Sp. Pl.?

106. U. *affine*, n. sp.; foliis longe petiolatis ovato-rotundatis abruptissime longe acuminatis acumine ½ vel totum folium æquante) basi lata truncatis, præsertim sursum undulato-repandis, receptaculis geminis axillaribus, junioribus ovatis subtrigonis.

HAB. Assam, Bengaliam, *Hb. Hook.!*

Hujus specimen juvenile videtur "*F. religiosa, Hb. Roxb. var. rhyncophylla Wall. List. n.* 4487, *E. et D. e Nepalia.*"

107. U. *courtallense*, n. sp.; foliis longe petiolatis ovatis æquilateris subabrupte breviter acuminatis basi leviter cordatis vix repandulis coriaceis glabris 3-5 nerviis costulisque utrinque 4-5, receptaculis axillaribus geminis subsessilibus.

HAB. Courtallum, *Wight*, 1836, n. 942.

U. Lambertiano et *U. religioso* accedit, ab hoc foliis multo minoribus brevius et obtusius acuminatis coriaceis, ab illo foliorum forma facile distinguitur. *Petioli*, cum nervo medio in sicco rubescentes 3-fere 5 cent., *folia* 6-8 cent. longa, 4½-6 lata.

108. U. *cordifolium*. (Ficus cordifolia, *Roxb. l. c. p.* 548, *ex cl. Syn. Rumph. Wight, Icon. II. Tab.* 640!) Foliis ovatis modice abrupte acute acuminatis subrepandis vel integerrimis, basi rotundata vel truncata ad petiolum leviter protractis, costis utrinque circiter 6.

HAB. Calcuttam, *Roxb.*; Assam, *Hb. Hook.!*

Var. foliis subcoriaceis magis rhombeo-ovatis, receptaculorum bracteis ad basin puberulis. Ex *Ind. Or.*, *Hb. Hook.!*

Num ad hanc sp. *F. populnea*, Kth. in Ind. Sem. H. berol. 1846, p. 15. (haud *Willd.*)? quod crederem quia sub hoc nomine in aliis etiam hortis viderim, et præsertim, quia receptacula sessilia dicantur.

b. *Receptacula pedunculata.*

109. U. *Arnottianum*, n. sp.; foliis longe petiolatis lato-

ovato-cordatis æquilateris breviter abrupte acuteque acuminatis, majoribus subundulato-repandis, basi profunde cordata 3-5-nerviis, costulisque utrinque 5-6 (in sicco rubescentibus), receptaculis axillaribus pedunculatis geminis vel subfasciculatis.

HAB. Ind. Or., *Wight*, n. 1910! quo teste huc *Wall. List.* n. 4185 a. a me non visum.

U. religiosa et *U. affinis* quoad folia quam maxime simile, sed ob receptacula pedunculata separandum.

Num hujus forma junior specimen e Courtallum ex *Hb. Wight*, n. 865, foliis coriaceis minoribus anguste acuteque acuminatis?

OBSERV. Num inter has vel sequentes species reperiunda: *Ficus lucida*, Ait. Hort. Kew. III. *p.* 451?

§. 2. *Folia longiuscula petiolata membranacea glabra ovato- vel angusto-oblonga. Receptacula sessilia vel subsessilia.*

110. U. *ægeirophyllum*; petiolis crassis succulentis, foliis ovato- vel subtriangulari-oblongis subabrupte acuminatis vel obtuso-apiculatis æquilateris vel inæquilateris, basi lata truncatis vel parumper concavatis, integerrimis marginibus subundulatis, subcoriaceis nitidis basi trinerviis atque utrinque 7-8-patulo-costulatis, stipulis ovatis convolutis sericeo-subpuberulis, receptaculis axillaribus geminis vel sæpe solitariis obovato-globosis.

HAB. In Bengalia, *herb. Hook.!*

OBS. *Ficus venosa*, Ait. Kew. III. p. 451, ex descriptione differt.

111. U. *Lambertianum*, n. sp.; foliis longe petiolatis ovato-oblongis vel summis minoribus ellipticis subabrupte obtusiuscule acuminatis basi truncatis, marginibus obsolete repando-undulatis, membranaceo-coriaceis nitidis trinerviis et utrinque costulis 4-6 subtus vix prominulis versus margines delitescentibus, anastomosibus immersis, receptaculis axillaribus geminis sessilibus globosis glabris ore bracteis clausis, basi bracteis 3 dorso puberulis.

HAB. Bombay, *Lambert, in herb. Hook.!*

Petioli haud crassi semiteretes 4-6 cent., *folia* 8-10 cent. longa, 4-5 lata.

Obs. *Ficus ovata,* Don, *(F. Nepalensis,* Spr. Syst. III. p. 779) receptaculis pedunculatis differre videtur.

112. U. *infectorium.* (Ficus infectoria, *Roxb. Fl. Ind. III. p.* 551, *excl. Syn. Rheed. Wight, Icon. II. tab.* 665! Foliis longiuscule petiolatis membranaceis oblongis vel sublanceolato oblongis modice acuteque acuminatis basi obtusis vel rotundatis, (subcordatis) integerrimis vel subrepandulis, costulis utrinque 8-10 patulis, receptaculis sessilibus geminis globosis glabris.

Hab. Ind. Or. Bengaliam, *herb. Hook.!*

Specimina satis cum icone cit. quadrant, attamen folia plerumque basi obtusa nec leviter excisa.—*Ficus infectoria,* Willd. Sp. IV. p. 1137. (F. venosa, *ejusd. Hort. berol. haud Ait. H. Kew, ed. I.*) diversa videtur a *T. infectoria,* Roxb., licet hic auctor identicam crediderit. *F. venosa,* Ham. excl. Syn. p. 151, huc pertinet.

113. U. *Pseudo-Tjiela.* (Ficus Tjiela, *Roxb. Fl. Ind. III. p.* 549, *ex cl. Syn. Rheed. Wight, Icon. tab.* 668! *Hamilt. in Linn. Transact. XV. p.* 149, *excl. Syn. præter Hort. Bengal.)*

Hab. In Ind. Or. montosis; Nopalry, *Wight!* in herb. Hook.

Obs. Quid *Ficus scandens,* Hamilt. l. c. nimis breviter descripta?

114. U. *Wightianum.* (Ficus Wightiana, *Wall. List. n.* 4540.) Foliis longe petiolatis rigide membranaceis ellipticis obtusiuscule attenuato-acuminatis, basi acutis trinerviis et subpatule utrinque 5-6-costatis, costulis versus margines ramulosis subconfluentibus subtus subprominulis, receptaculis sessilibus vel breviter pedunculatis obovato-globosis.

Hab. Ind. Or. Bongaloor, *Wight!*

Petioli 4 cent., *folia* 8 longa, 4 lata.

115. U. *pseudo-Benjamineum.* (Ficus Benjaminea, *Hb. Russel.*

Wall. List. n. 4503! *Wight herb. haud Willden. nec Roxb.)* Ramulis nascentibus petiolis receptaculisque junioribus pube tenera inspersis, petiolis ½ folii longitudinem superantibus, foliis subcoriaceis ovato- vel lato-ellipticis abrupte breviter obtusiusculeque acuminatis, ima basi ad petiolum leviter attenuatis, tenuiter patule costiveniis nervo marginatis, receptaculis geminis sessilibus obovato-globosis, basi bracteis 3 caducis subglabris.

HAB. Ind. Or. Luddaloor, *Wight!*

A vera *F. Benjaminea* multum differt, et petiolorum longitudine statim discernitur. Hi. 3-4 cent. longi.—Specimini Wightiano adjecto est *forma parasitica angustifolia,* quæ omnino eadem species videtur, num e seminibus ipsius arboris in ejus trunco germinantibus enata?

OBS. *Ficus comosa,* Roxb. Corom. II. n. 125, Fl. Ind. III. p. 552, Wight, Icon. II. tab. 658! a me nondum visa, forsa hujus generis species.

116. U. *perseæfolium,* n. sp.; foliis longe petiolatis lanceolato- vel elliptico-oblongis obtuso-acuminatis, basi obtusis vel acutiusculis subundato-repandis trinerviis et utrinque 5-8-costulatis, costulis subobtectis venulisque vix conspicuis, receptaculis breviter pedunculatis globosis glabris.

HAB. Ind. Or. Pulney mountains, *Wight!*

Petioli 2-4½ cent. longi; *folia* 8-12 cent. longa, 2½-4 lata subcoriacea, lævissima glabra. *Gemmæ* ovatæ ½ cent. longæ puberulæ. *Receptacula* cerasi fere magnitudinis basi 3-bracteata.—*Forma* foliis paullo latioribus in *Courtallum* a cl. *Wight* lecta.

117. U. *Tjakela.* (Tjakela (errore Tjiela in Tab.) *Rheede, Mal. III. tab.* 64. Ficus Tjakela, *Burm. Fl. Ind. p.* 227.) Foliis longe petiolatis ovato- vel elliptico-oblongis subabrupte obtusiuscule acuminatis, basi rotundatis, præsertim versus apicem undato-repandis, trinerviis et utrinque circiter 10-costulatis, coriaceo-membranaceis supra saturate viridibus nitidis, subtus pallidis, receptaculis ad axillas defoliatas geminis sessilibus depresso-globosis glabris.

HAB. Courtallum, *Wight!*

Petioli 5-6 cent. longi succulenti in sicco fragiles; *folia* 14-17 cent. longa, 6-7$\frac{1}{2}$ lata. *Stipulæ* ovatæ convolutæ rigide coriaceæ 1 cent. vix longæ. *Receptacula* pisi circiter magnitudinis basi. *Bracteis* 3 glabris sustenta.

Cum icone cit. hæc nostra satis congruit, non solum quoad folia sed maxime quod ad recept. attinet, quibus præsertim congruentia confirmatur. Sic stirps Rheedei nunc primum de novo reperta!

§. *Folia ut in* §. 2. *Recept. parva ad axillas defoliatas aggregata pedunculata.*

118. U. *caulobotryum*, n. sp.; foliis longe petiolatis ovato-oblongis acuminatis basi rotundatis, integerrimis membranaceo-coriaceis glabris, sursum subundulatis, trinerviis et utrinque 6-8-costulatis subtus tenere reticulatis, receptaculis ad axillas defoliatas fasciculatis pedunculatis, parvis subturbinato-globosis, ore subprominulo arcte clausis, basi bracteis 3 latis sustentis.

Hab. Ind. Or., *Wight!*

Petioli 8 cent., *folia* 16-18 longa, 7-8 lata. *Pedunculi* 4-5 mm. longi; *receptacula* in sicco lutescentia. Ab *U. caulocarpo* differt foliis latioribus et nervis paucioribus, etc.

119. V. *caulocarpum*, n. sp.; foliis longe petiolatis oblongis subabrupte obtusiuscule acuminatis, basi rotundatis integerrimis, 12-15-patulo-costiveniis, coriaceo-membranaceis, subtus vix reticulatis, stipulis perulaceis ovatis imbricatis, receptaculis breviter pedunculatis ad axillas defoliatas geminis vel pluribus globosis glabris, bracteis 3 basi connatis demi circumscissis.

Hab. In insul. Philippinis, *Cuming!* n. 1930.

Petioli 4-5 cent. dorso apicis tumiduli; *folia* 13-19 cent. longa, 4-5$\frac{1}{2}$ lata. *Gemmæ* ovatæ extus albo-floccosæ.

120. U. *stipulosum*, n. sp.; foliis modice petiolatis membranaceis oblongo-ellipticis breviter subabrupte obtusiuscule acuminatis, basi obtusa subtrinerviis, venulisque utrinque circiter 8, stipulis maximis membranaceis lanceolatis acutis vel obtusis nervosis, receptaculis ad axillas defoliatas aut in axillis foliorum solitariis, gemmis vel et pluribus glo-

bosis breviter pedunculatis, bracteis ad basin 3 pedunculisque brevi-puberulis.

Hab. In ins. Philippinis, *Cuming*, n. 1978.

§. 4. *Folia longiuscula petiolata angusta glabra. Rec. sessilia.*

121. U. *timorense*, n. sp.: foliis longe petiolatis anguste oblongis in acumen breve obtusum desinentibus basi acutis, subundato-repandis, membranaceis, costis utrinque 6-7 subpatulis versus margines subconfluentibus, gemmis ovatis subpuberulis, receptaculis axillaribus sessilibus geminis globosis glabris basi 3-bracteatis.

Hab. Timor, herb. Hook.!

Petioli 3, *folia* 9-10 cent. longa, 2½-4 lata. *Receptacula* piso minora.

122. U. *amblyphyllum*, n. sp.; foliis modice vel longiuscule petiolatis oblongo- vel spathulato-obovatis, basi ipsa obtusiuscula vel leviter emarginata, æquilateris apice rotundatis vel leviter retusis, integerrimis, subcoriaceis, venulis utrinque circiter 6 patulis inter reliquas distinctioribus prope marginem conjunctis, subtus tenere reticulatis, supra aveniis, stipulis diutius persistentibus lanceolatis membranaceis, receptaculis plerumque ad axillas defoliatas sessilibus geminis vel solitariis depresso-globosis concavo-umbilicatis, basi tribracteatis.

Hab. Ind. Or., *Alul!* in herb. Hook. sub *Ficus nitida.*

Ramus deorsum receptaculis, superne foliis instructus. *Petioli* 1-2 cent., *folia* 5-8 longa, 2-4 lata, læte viridia. *Stipulæ* ½-1 cent. longæ subscariosæ, dorso medio subpilosæ. *Recept.* pisi fere magn.

123. U. *obtusifolium.* (Ficus obtusifolia, *Roxb. Fl. Ind. III. p.* 546. *Wight, Icon. II. tab.* 662! *haud Humb. Nov. Gen.*)

A præcedenti foliis basi haud adeo attenuatis nec ipsa basi emarginatis sed in petiolum sensim continuatis facile distinguitur.

Hab. In sylvis Chittagong, *Roxb.* Colitur in H. Amstelæd. cum icone citata omni ratione congruens.

124. U. *reflexum.* (Ficus reflexa, *Thunb. Diss. Ficu. p.* 11. *n.* 16. *ubi fusior descriptio.*)

Hab. In India Orientali.—Ab omnibus a me visis ex descriptione differt.

125. U. *concinnum*, n. sp.; foliis longe petiolatis lanceolatis rectis vel obliquis utrinque attenuatis, obtusiusculis, integerrimis subundulatis tenuiter costiveniis, venulis utrinque circiter 15 patulis, stipulis parvis ovatis acuminatis ciliolatis, receptaculis axillaribus solitariis vel geminis brevissime pedunculatis subglobosis.

Hab. In ins. Philippinis, *Cuming*, n. 1940!

Rami læves glabri. *Petioli* tenues antice lato-canaliculati 2½-fere 4 cent. longi, *folia* 5-10 longa, 2-2½ lata, membranacea nitidula, venulis utrinque prominulis. *Receptacula* magnitudine grani coriandri, apice vix prominulo arcte occlusa, basi 3-bracteata.

126. U. *parvifolium*, n. sp.; foliis longe petiolatis ellipticis apice abrupte obtuse apiculatis, basi acutis vel obtusis, plerumque æquilateris, integerrimis, versus apicem subundulatis venis patulis utrinque 10-15, receptaculis axillaribus geminis et solitariis sessilibus vel subpedunculatis.

Hab. In ins. Philippinis, *Cuming*, n. 1935!

Petioli 1½-2 cent. longi late canaliculati; *folia* 4-6 cent. longa, 2-fere 3 lata, majora quandoque inæquilatera, membranacea, nitida, venulosa.

127. U. *apiculatum*, n. sp.; foliis longiuscule petiolatis lato- vel elliptico-ovatis æquilateris abrupte brevissime acuminatis vel apiculatis, basi rotundatis, margine lævi undulatis, nitidis subtus pallidis, costulis erecto-patulis utrinque 8-10, receptaculis . . . .

Hab. Ind. Or., *Wight*, n. 1916!

Ramuli glabri læves. *Petioli* tenues 2-3 cent. longi, subsemiteretes, sulco antico elevato-marginato. *Folia* supra saturate viridia, subtus pallida utrinque nitida, membranaceo-coriacea, 5½-6 cent. longa, 4-4½ lata.

128. U. *Ceylonnese*, n. sp.? glabrum, foliis longiuscule petiolatis ovato-oblongis acuminatis basi rotundatis æquilateris integerrimis subcoriaceis glabris trinerviis et utrinque 12-14-costatis, stipulis maximis lanceolatis membranaceis

carinato-navicularibus, receptaculis ad axillas defoliatas geminis vel solitariis sessilibus parvis depresso-globosis basi 3-bracteatis.

HAB. In ins. Ceyloni, "Columbo, 7 Apr. 1796, Kiribella vel Kiripaella Cingal." *Heyne?* in herb. Arnott!

Habitu omnino *U. stipulosum* refert, foliorum forma receptaculisque sessilibus facile distinguendum. *Rami* teretes læves glabri, ramuli angulati. *Folia* nascentia nunc fere palmaria. *Stipulæ* 5-9 cent. longæ subobliquæ viridulo-lutescentes striato-nervosæ. *Receptaculo* piso minora.—Inter sp. descriptus licet haud reperim, vix tamen credibile, hanc esse indescriptam.

‡. 5. *Folia majuscula ovato-subcordata* 3-5-*nervia et pluricostata puberula membranacea, integerrima. Recept. subturbinato-obovata, pedunculata.*

129. U. *Dalhousiæ*, n. sp.; petiolis pedunculis receptaculis foliisque subtus molliter puberulis glabrescentibus, foliis modice petiolatis ovatis vel lato-ellipticis abrupte latiuscule apiculatis, basi cordatis, 3-6-nerviis et utrinque 12-14-costatis, integerrimis coriaceo-membranaceis, supra glabris, receptaculis geminis breviter pedunculatis subturbinato-obovatis, basi bracteis 3 patulis coriaceis.

HAB. In Ind. Or., *Wight*, n. 2998!

Habitu quibusdam speciebus Africanis, v. c. *U. abutilifolio* quam maxima cognatum. *Rami* lævigati annulati crassi. *Petioli* semiteretes 4 cent., *folia* 12-19 longa, 12-16 lata. *Receptacula* 1-1½ cent. longa peduncula longiora.

Prope hanc sp. forsan collocanda *Ficus ramentacea*, Roxb. l. c. p. 546. Wight Icon. tab. 657.

§. 6. *Folia breviter vel modice petiolata robusta vulgo crasse aut rigide coriacea plerumque cum reliquis partibus juniore ætate pubescentia vel tomentosa, ætate glabrescentia, rarius juniora jam fere glabra, cordato-ovata, elliptica, oblonga, integerrima costulata subtusque vulgo reticulata. Stipulæ sæpe dense villosæ. Recept. fere omnibus sessilia.*

130. U. *benghalense*, Gasparr, l. c. p. 82. Tab. VII. fig. 14—

21 (flores). (Ficus indica, *Linn. Amœn. I. p.* 27. *Roxb. l. c. p.* 539. *haud Linnæi in opp. poster. quæ maxime spectat aliam* U. Tjielam. Ficus benghalensis, *Linn. excl. quib. Synon.* Commelin. *Hort. Amstel. I. p.* 62. *Thunb. Diss.* 5. *Willd. Spec. IV. p.* 1135. *Spreng. Syst. Veget. cf. Hook. Journ. of Bot. Vol. III. p.* 287. *Tab. XIII. et XIV.* (*optime*). Peraln. *Rheede, Hort. Malab. Tom. I. Tab.* 28. (*accurate*). Ficus lasiophylla, *Link. Enum. II. p.* 449. *teste Kth.* Ficus crassinervia, *Hort. berol, nec Desf.*)

HAB. In Ind. Orient. variis locis, Bengalia, *Hb. Hook.!* Viriagapatam, n. 76. *Hb. Campbell*, spontanea in *montosis Circars*, circa domos Indorum culta (*Roxb.*) Travancore, (*Wight*, n. 3001! forma foliis summis magis ellipticis,) Terra Canara, *Hb. Miq.* Mauritius, *Hb. Hook.*!

OBSERV. Linnæus celebrem hanc arborem præsertim in mente habuit, cum in F. indicæ charactere ramos radicantes dixit, cum autem ex autopsia speciem ipsam nondum cognitam haberet, male huc etiam retulit *Rheedei* figuram *Tom. III. Tab.* 63. Re dein melius perspecta, nostram tanquam varietatem distinxit: *F. indica, β Sp. Pl. II. p.* 1514, sed deinde sub F. bengalensis nomine (sub quo in H. Amstelæd. tum colebatur et hodie adhuc colitur) enumerabat. Ita factum est ut complures auctores etiam sub *F. indica* illam *Tjielam Rheedei* et sub *Ficus benghalensi, F. indicam*, Linn. Am. Acad. intellexerint, v. c. Vahlius, *Enum. II. p.* 187 et *p.* 195, synonymis autem sæpe heterogeneis adjectis, v. c. *Varingæ latifoliæ*, Rumph. Herb. Amb. III. Tab. 84. quæ est sp. longe diversa Roxburghius in *Fl. Ind. F. indicam*, Linn. Am. Acad. restituit. Cum autem ipse Linnæus sub *F. bengalensis* nomine recte descripserit, et *F. indica*, Syst. veg. Rheede, Tab 63, omnino diversa sit, nomen illud retinendum videtur. In hortis culta fere glabrescit quo factum videtur, ut *Thunbergius* et *Vahlius* l. c. folia utrinque glabra dixerint.

Folia forma variantur: mox latiora obtusissima, mox lato-elliptica utrinque obtusa; juniora subtus tomentoso-pubescentia, pube in reliquis etiam partibus lutescente. Sequentes species, licet foliorum forma diversæ, alioquin arcto connubio conjunguntur.

131. U. *tomentosum.* (Ficus tomentosa, *Roxb. Fl. Ind. IV. p.* 550. *Willd. Sp. IV. p.* 1134. *Wight, Icones II. Tab.* 647! Ficus mollis, *Vahl, l. c. p.* 192. Ficus pubescens, *Roth. Nov. Pl. Sp. Ind. Or. p.* 387 *ex descriptione satis congrua, licet idem auctor p.* 390 *de ipsa F. tomentosa, Roxb.* loquatur.)

HAB. In Ind. Or. "Extensively diffused over the southern provinces of India, but not abundant any where." *Wight.* Ad Gadaradah, 27 Oct. 1792, sub nomine citato, *Rottler. ?* in Herb. Arnott.; Pulney Mountains, *Wight !*

Specimina satis cum icone Roxb. congruentia, attamen folia plerumque haud adeo acuta. *Variat* multum quoad foliorum formam.

132. U. *obversum,* n. sp.; ramis glabris, ramulis petiolis stipulis receptaculisque junioribus hirto-tomentosis, foliis longiuscule petiolatis oblongo-vel elliptico-obovatis apice obtusis vel plerumque lato-rotundatis, basi leviter excisis, integerrimis, adultis supra glaberrimis minute punctulatis in nervo medio puberulis, subtus lutescenti-tomentellis, trinerviis et utrinque 3-5-costulatis, receptaculis axillaribus geminis raro solitariis sessilibus sensim glabrescentibus, basi bracteis 3 latis dorso villoso-hirtis suffultis.

Huc referenda *F. asinina Wall. List.* n. 4497. b. *in Hb. Wight !* haud *Hamilt. in Linn. Transact.*

Petioli 2-3, *folia* 5-11 cent. longa, 3-7½, vulgo 6-7 supra medium lata, subtus nervis reticulata, supra lævia in sicco pallida, subcoriacea. *Stipulæ* ovato-acuminatæ villoso-hirtæ convolutæ 1 cent. longæ.

Species præcedenti quam maxime cognata, me judice autem ob foliorum formam seperanda.

De *Ficu asinina* conf. infra.

133. U. *connivens,* an n. sp.? ramulis petiolis stipulisque

rufo-tomentosis, foliis longe petiolatis rotundato-obovatis apice rotundatis vel obtusiuscule apiculatis, baseos constrictæ subcordatæ lobulis conniventibus fere incumbentibus, integerrimis, coriaceis, trinerviis et utrinque 2-3 costulatis, subtus tomentellis, supra punctatis adultis glabris, in nervo medio puberulis vel glabris, receptaculis axillaribus geminis tomentellis, ore bracteis 3 glabris membranaceis occlusis, basi bracteis 3 latis hirtellis.

HAB. In Ind. Or., *Wight !*

U. Bengalensi affine, sed foliorum forma, præsertim eorum basi protempore distinguendum. Receptaculis autem *U. tomentoso* et *obverso* simillimum.

Petioli 2-4, *folia* 5-9 cent. longa, 4-7 lata, subtus reticulata et in nervo medio glandula oblonga instructa.

134. U. *dasycarpum*, n. sp.; ramulis receptaculisque dense tomentosis, foliis breviter petiolatis lato-ovatis vel ellipticis breviter obtusiuscule acuminatis, basi rotundatis vel leviter cordatis, quandoque subundato-repandis, crasse coriaceis, supra glabris vel glabratis, subtus petiolisque tomentoso-pubescentibus, costis utrinque 8-10 patulis ad marginem arcuato-confluentibus subtus crebro reticulatis et valde prominentibus, receptaculis axillaribus sessilibus plerumque geminis ellipsoideis utrinque obtusis, ore bracteis glabriusculis occlusis, basi bracteis 3 obtusis membranaceis extus pubescentibus. (TAB. XXIII. B.)

HAB. Bombay, *Lamb.* in herb. Hook.! Ceylon, *Walker !*

Rami glaberrimi. *Petioli* ½-1½ cent., *folia* 8-10 cent. longa, 5-7 lata.

TAB. III. B. *U. dasycarpum*, ramus fructif. n. m.—*a.* Fl. masc.; *b.* Stamina; *c.* Fl. fem. sub anthesi; *d.* Cum achenio fere maturo et bracteolis; *e.* Pistilla:—a. m.

135. U. *Mysorense.* (Katon-Alon, *Rheede, Mal. III. tab.* 57. Ficus Mysorensis, *Roth ! Nov. Sp. Pl. Ind. Or. p.* 390. F. tomentosæ *variet.*? *Heyne*? *in herb. Arnott.* Ficus Gonia, *Hamilt. l. c. p.* 137. *excl. Syn.* Huc *Wall. n.* 4499. *partim teste cl. Walker-Arnott.* Ficus cotoneæfolia, *Vahl excl.*

Syn. Rumph. F. Indica, *Lam. Encycl.)* Ramulis petiolis foliisque junioribus subtus totis supra in nervis, stipulis receptaculisque dense ferrugineo-tomentosis, foliis ovatis vel ovato-ellipticis breviter subabrupte acuminatis æquilateris, basi leviter emarginatis, integerrimis, crasse rigideque coriaceis, ætate glabrescentibus quandoque omnium glabris, costatis utrinque 12-15 patulis ante marginem bifidis et conjunctis, receptaculis axillaribus geminis sessilibus, junioribus involucro crasso calyptræformi cornuto inclusis, oblongis, basi bracteis 3 coriaceis dorso sericeo-hirtis.

Hab. In Ind. Or., Sallam, m. Mars. 1806, *Heyne*? in herb. Arnott! Assam, *herb. Hook.!* forma prorsus glabrata.

Statura præcedenti multo major.

Huc citanda esset *Ficus Indica,* Linn.—Burm. Fl. Ind. p. 225, quoad Syn. Rheedei, haud quoad phrasin.

136 U. *chrysophthalmum,* n. sp.; ramulis subglabris, petiolis nervisque subtus subappresse puberulis, foliis breviter petiolatis ovato- vel lato- vel subrhombeo-ellipticis apice obtusis vel obtuso-apiculatis, integerrimis, crasse rigide coriaceis, costis utrinque 10-12 patulis subtus valde prominentibus et tenere transverse reticulatis, stipulis lanceolatis convolutis aureo-sericeo-hirsutis, receptaculis axillaribus.

Hab. Ind. Or., *Wight,* in herb. Arnott! 1836, n. 949.

Petioli crassi juniores luteo-sericei, serius glabrati 1½-2, *folia* 13-18 cent. longa, 8-11 lata, diversiformia. *Stipulæ* 2½ cent. *Receptacula* nascentia puberula?

137. U. *lacciferum.* (Ficus laccifera, *Roxb. l. c. p.* 545. *Wight Icon. II. tab.* 656.)

Hab. In Silhet, *Roxb.*

138. U. *onustum.* (Ficus onusta, *Wall. List.* n. 4563.) Glabrum, foliis oblongis raro obovato-oblongis breviter obtuse acuminatis, basi obtusis vel subemarginatis raro acutis, integerrimis, subtrinerviis et patule multi-costulatis, costulis majoribus utrinque circiter 8 subtus prominentibus et

reticulatis, receptaculis geminis sessilibus vel quam brevissime pedunculatis, bracteis basi 3 latis subpuberulis.

Hab. Penang, *Wall.!*

Num junius etiam glabrum? Habitu cum præcedentibus congruit. *Folia* 12-17 cent. longa, 6-7½ lata. *Stipulæ* breves convolutæ. *Receptacula* piso majora glabra.

139. U. *depressum.* (Ficus depressa, *Blume, Rydr. Nederl. Ind. Zolling. pl. Jav. cæs. n.* 571.) Foliis oblongis æquilateris acuminatis basi obtusa vel rotundata leviter emarginatis, coriaceis integerrimis, costulis utrinque 12 et pluribus patulis, supra glabris lævibus, subtus reticulatis et in venulis subhirtellis, stipulis elongato-lanceolatis acuminatis glabris, receptaculis breviter pedunculatis ovatis basi 3-bracteatis glabris.

Hab. In Java, *Zolling.!*

Petioli 2½-3½ cent., *folia* 26-31 longa, 10-12 lata. *Stipulæ* 6-8 cent. *Receptacula* 3-3½ cent. longa ligneo-coriacea.

Obs. Ex horum affinitate est species imperfectissime cognita: *Ficus coriacea,* Ait. Kew. III. p. 453.

140. U. *bracteatum.* (Ficus bracteata. *Wall. List. n.* 4498.) Foliis crasse coriaceis oblongo-ellipticis vel obovatis obtuso-rotundatis vel obtuse apiculatis, basi truncatis vel plerumque supra petiolum emarginatis, integerrimis, tri- vel subquinquenerviis costulisque utrinque 5-6, adultis supra glabris, junioribus in nervo puberulis, subtus petiolisque tomentello-pubescentibus, receptaculis axillaribus sessilibus globosis fusco-hirtis, basi 3-bracteatis.

Hab. Singapur, *Wall.!*

Petioli semiteretes 2½-3 cent. longi. *Folia* 18-20 cent. longa, 10-18½ lata costis validis subtus prominentibus patula versus margines adscendentibus confluentibus reticulatis. *Receptacula* fere aureo-hirta. *Bracteæ* latæ concavæ dorso puberulæ. *Receptacula* juniora involucro inclusa videntur.

141. U. *leucocarpum*, n. sp. Ficus Lacor, *Hamilt. in Trans. Linn. Soc. t. XV. p.* 150. ?) Ramulis petiolis foliisque subtus nascentibus pilis tenerrimis inspersis mox glabris,

his longiuscule petiolatis oblongis vel ovato-oblongis obtusiusculis basi obtusis vel rotundatis, integerrimis vel obsolete repandis æquilateris coriaceis supra nitidis, subtus pallidis, trinerviis et utrinque circiter 6-costulatis, receptaculis geminis axillaribus vel infra rameis pedunculatis obovatis basi 3-bracteatis albo-puberulis.

HAB. Ind. Or. *Hb. Wight*, n. 1914, quo teste huc *Wall. List.* n. 4549!

Species in sect. quodammodo heterogenea, ad *U. Pseudo-Tjiela* accedens. *Rami* teretes fuscescentes glabri. *Petioli* 2-3, *folia* 12-15 cent. longa, 4½-6½ lata. *Stipulæ* 3-4 mm. longæ ovatæ puberulæ. *Receptacula* pisi magnitudinis pedunculum æquantia.

Adnotatio. Hamilton aliquot species indicas descripsit, *U. obverso*, *mysorensi*, &c. præsertim affines, iis autem ex auctoris descriptionibus, licet perinde brevioribus, haud adjungendas.

Ficus asinina Ham. in Linn. Societ. Transact. Vol. XV. p. 138. In collibus ad Behar Indiæ.

Ficus rupestris, ejusd. l. c. p. 139, ex Mysore, ad *U. mysorense* ob foliorum formam, ad *U. tomentosum* ob folia utrinque pilosissima referri nequit.

Adnot. Ex præcedentium affinitate videtur *Ficus ampla*, Kth. et Bouché l. c. p. 18 (F. cotoneæfolia, *Hort. berol. nec Vahl*, F. indica, *Hort. berol. nec Vahl*,) sed cujus receptacula nondum descripta.

§. 7. *Glabra; folia crasse vel rigide coriacea elliptica vel oblonga integerrima nitida, pauci-costulata venulisque crebris parallelis striata. Recept. sessilia.*

142. U. *xylophyllum*. (Ficus xylophylla, *Wall. List.* n. 4558.) Foliis crasse duro-coriaceis oblongis vel obovato-oblongis obtusis basi acutiusculis trinerviis et crasse costatis, nervo medio costisque subtus valde prominentibus patule adscendentibus ad marginem confluentibus reticulatis, supra lævigatis nitidis, receptaculis sessilibus oblongis apice attenuatis; ore prominulo bracteis imbricatis concavis occluso, basi bracteis 3 obtusis pubescentibus.

Hab. Singapore, *Wall.!*

Fortasse præcedenti sectioni aptius adscribendum, cum folia subtus prominenter reticulata. Florum structura a congeneribus aliquantum diversa; perigonium masc. v. c. bifidum, etc.

143. U. *elasticum*. (Ficus elastica, *Roxb. Fl. Ind. III. p.* 541. *Wight, Icon. II. Tab.* 663! Macrophthalma elastica, *Gasparr. Ricerche p.* 83. *Tab. VIII.* Ficus Tæda *et* F. cordata, *Hort. berol. teste Kth. l. c. p.* 14. F. suborna, *Hamilt.*)

Hab. In Ind. Or., in montosis versus partem borealem, *Silhet, Roxb.*, Ind. Or., *Hb. Hook.*! colitur ubique in Hort. botanicis.

In sp. cultis petioli longiores nec antice canaliculati, uti in icone cit., sed hæc ramum *fructif.* refert quorum petioli vulgo *canaliculati* in aliis etiam speciebus inveniuntur.

Num sp. a cl. *Gasp.* descripta verum *U. elasticum?* Florum enim analysis tum ad Roxb. in Fl. Ind. observationibus tum ab iis quæ ipse vidi recedit.

Quoad fl. structuram a congeneribus differt quidem, nec tamen sejungendum videtur. Stigma abbreviatum dilatatum subobliquе concavatum. Masc. et fem. fl. mixti; illi tri-vel tetraphylli.—De distrib. geograph. *Griffith in Asiat. Journ. Feb.* 1838.

Var. *latifolium*. An species? Foliis breviuscule petiolatis coriaceis nitidis lato- vel ovato-ellipticis breviter acuteque acuminatis, basi rotundatis, receptaculis geminis cylindraceo-angulatis involucro calyptræformi deciduo inclusis.

Hab. Assam, *Hb. Hook.!*

Folia 25 cent. longa, 14 lata. *Stipulæ* ut in U. elastico, 15 cent. longæ.

144. U. *rigidum*, n. sp.; ramulis angulatis, foliis modice petiolatis oblongis vel lanceolato-oblongis subabrupte breviter acute acuminatis, basi acutiusculis, æquilateris, integerrimis crassis rigidis supra nitidis lævigatis, trinerviis et utrinque costis 4-5 crassis patule adscendentibus ante marginem confluentibus valde prominentibus et quam

tenerrime reticulatis, stipulis ovato-triangularibus acutis coriaceis glabris, receptaculis axillaribus geminis junioribus depresso-globosis bracteis latis rotundatis involucratis.

Hab. Prince of Wales' Island, *Hb. Hook.!* sub *Ficu Tjiakela.*

Petioli semiteretes antice plani et sulco angusto profundo exarati 1-3 cent., *folia* 12-18 longa, 6-7 lata, subtus in sicco fuscescentia, supra nervis sulcata. *Stipulæ* 2 cent. longæ.

145. U. *clusioides,* n. sp.; foliis longiuscule petiolatis oblongo-obovatis oblongisve brevissime apiculatis, basi acutis vel cuneatis, integerrimis crasse coriaceis trinerviis, venulisque utrinque circiter 8 distantibus in nervum submarginalem confluentibus, stipulis ovatis acutis coriaceis glabris, receptaculis axillaribus geminis sessilibus.

Hab. In ins. Philippinis, *Cuming,* n. 1929!

Ramuli angulati glabri. *Petioli* crassi semiteretes antice lato-canaliculati 2½-3½ cent. longi. *Folia* 10 cent. longa, 5½-6 lata. *Stipulæ* 2 cent. superantes. *Receptacula* (nunc) parva, *bracteis* ad basin 3 latis coriaceis.

§. 8. *Glabra; folia modice petiolata haud crasse coriacea oblonga, obovata, &c., parallele tenuiter multivenia, venulis quibusdam paullo fortioribus, quandoque omnibus æqualibus tenuissimis striata. Stipulæ parvæ. Recept. sessilia.*

146. U. *rhododendrifolium,* n. sp.; foliis oblongis vel lanceolato- vel elongato-oblongis subabrupte suboblique breviter acuminatis, basi acutis vel subcuneatis, integerrimis rigidiuscule coriaceis lævissimis nitidis subpatulo-costiveniis, margine acutato subincurvis, receptaculis geminis sessilibus subglobosis, basi concava tribracteatis.

Hab. Assam, *Hb. Hook.!*

Petioli 1½-2½ cent., *folia* 18-10 longa, 6-4½ lata, supra medium vulgo latiora, quædam omnino lanceolata; venulæ tenuissime anastomosantes. *Receptacula* piso paulo majora.

147. U. *canaliculatum,* n. sp. (Ficus obovata, *Hb. Hook.)* Petiolis longiusculis subtrigonis antice profunde canaliculatis, foliis oblongis vel subobovato-oblongis obtuse apicu-

latis, basi acutis vel subcuneatis (ima basi antice subbicalloso-producta), coriaceis, utrinque lævibus subepunctulatis trinerviis, venulis utrinque 6-8 patulis ante marginem arcuato-punctis subreticulatis, nervulo marginali nullo, receptaculis axillaribus solitariis vel geminis sessilibus globosis vel obovatis, apice bracteis 3 occlusis, basi totidem obtusis glabris sustentis.

Hab. Prince of Wales' Island, *Hb. Hook.!*

Petioli 2-3, *folia* 7-11 cent. longa, 3½-fere 5 lata. *Gemmæ* ovatæ, stipulis ovatis parvis glabris. *Receptacula* pisi minoris magnitudine.

148. U. *Tjiela.* (Ficus indica, *Linn. Syst. Veg. p.* 922, *haud Amoen. Acad. l. c. nec Roxb.* Ficus amplissima, *Smith in Rees' Cyclopæd.* Tjiela, *Rheede Hort. Malab. Tom. III. Tab.* 63. satis congrua, folia tantum paullo angustiora et acutiora!) Foliis modice petiolatis oblongis vel elliptico-oblongis breviter obtuse vel acute apiculatis basi acutis vel obtusis, tri- vel subquinquenerviis et subpatule costiveniis, venulis fortioribus inter tenuiores subparallelis ante marginem confluentibus, crassiuscule coriaceis, receptaculis geminis in ramulis terminalibus vulgo aphyllis subracemoso dispositis, sessilibus globosis.

Hab. Mergui, *Griffith*, n. 3! Ins. Philippinas, *Cuming*, n. 1931!

Folia 12 cent. longa, 5 lata. *Receptacula* piso paulo majora basi tribracteata. *Flores perigonio* 3-partito, lobis concavis fuscis nitidis. *Bracteolæ* lanceolatæ. In *Sp. Cuming* folia obtuse, in Griff. acute apiculata.

Specimina mea ab icone citata differunt etiam foliis paullo longioribus; attamen ad eam esse referenda, suadent reliqua omnia, eademque ratione in his video *F. indicam*, L. Num hujus loci *F. rubra, var. β*. Roth. l. c. p. 391—392?

149. U. *pisiferum.* (Ficus pisifera, *Hb. Hook.* Ficus condaravia, *Hamilt. in Linn. Societ. Transact. Vol. XV. p.* 131 *ex descript., ex cl. Syn. Rheedei.*) Foliis modice petiolatis obovato-oblongis obtuso apiculatis, basi subæquali attenuatis, coriaceis, versus apicem vulgo subundato-repandulis coriaceis, 3-raro-5-nerviis et subpatule costiveniis, venulis

quibusdam fortioribus inter tenuiores dispositis, cum basilari nervo utrinque adscendenti conjunctis, subtus subreticulatis, supra aveniis receptaculis axillaribus geminis sessilibus globosis, basi bracteis 3 concavis crassis haud glabris sustentis, ore marginato.

Hab. Bengaliam, Assam, *Hb. Hook.!*

Præcedenti proximum, statura minus, receptaculorum situ, bracteisque satis distinguendum. *Ramuli* transverse rimosi. *Petioli* in sicco nigrescentes ½-1 cent. longi trigono-semiteretes; *folia* 5-8 cent. longa, 2½-3½ rara 4 lata. *Receptacula* piso minora.

150. U. *drupaceum.* (Ficus drupacea, *Thunb. Diss. de Ficu,* n. 19.

Hab. Ind. Orient., Javam.

151. U. *ovoideum.* (Ficus ovoidea, *Jack. Malay. Misc.* 2. *n.* 7. *p.* 71. *Wall. List. n.* 4524. *haud Kth. in Ind. sem. H. berol.* 1846. *p.* 20. Itty Alon, *Rheede, Mal. T. I. Tab.* 26. satis quadrat, differt tantum foliis paullo majoribus omnibusque fere obtuso-apiculatis. Ficus pyrifolia, *Burm. Fl. Ind. p.* 226 *quoad syn. Rheed.*)

Hab. Penang, *Jack.!*

Differt ab *U. retuso* foliis obovatis vel obovato-ellipticis apice haud adeo dilatatis, margine lævi angusto. Apex raro in brevem apiculum productus. Partes omnes adultæ glabræ.

Forma foliis basi obtusis: Courtallum, *Wight, herb.* n. 1915! *Wall.* n. 4530. *b.* a me non visum.

Forma foliis longius (1-2½ cent.) petiolatis basi acutis, *Wight, herb.* n. 2996!

152. U. *retusum.* (Ficus retusa, *Linn. Mant. p.* 129.) Foliis modice petiolatis lato- vel subrotundato-obovatis apice dilatato brevissime obtuso-apiculatis vel retusis, subemarginatis, membranaceo-coriaceis, venulis erecto-patulis utrinque 10 circiter distinctioribus, reliquis capillaribus, tenere reticulatis, petiolis antice lato-sulcatis, receptaculis axillaribus geminis sessilibus, bracteis puberulis.

Hab. Ind. Or., Bombay, *Hb. Hook.!*

Sequenti proximum, forsan nimis affine: differt ramulis, stipulis, et receptaculis nascentibus jam fere glabris, foliis apice valde dilatatis, plerumque retusis vel in apiculum abrupte desinentibus. *Petioli* vulgo 1½-2 cent. longi semitereti-compressi antice concaviusculi. *Stipulæ* vix 1 cent. æquantes. *Folia* 4½-7 cent. longa, 3-5 lata, in sicco pallide viridia, lævia, supra ad lentem punctulata, subtus reticulato-striulata.

156. U. *nitidum*. (Ficus nitida, *Thunb. Fic.* n. 14. *Roxb. in Icon. Wight, II. Tab.* 642, satis congrua. *Kth. l. c. p.* 20. Ficus benjaminea, *Roxb. Flor. Ind. III. p.* 550. F. nitida, *ejus MSS. Hort. Livon.! ?Kth. l. c.* Ficus nitida, *vera et* F. elliptica, *Hook. Herb.!* F. retusa, *H. berol.*, Kth. Arealou *Rheede Hort. Mal. Tom. III. Tab.* 55. Ficus rubra, *Roth. l. c. p.* 391, *exc. var. β et syn. Rumph.*) Ramulis subtrigonis, foliis modice sæpe longiuscule petiolatis, ellipticis vel obovato- aut subrhombeo-ellipticis obtuse breviter subapiculatis, basi acuta vel subcuneata subtrinerviis venulisque utrinque pluribus subimmersis vel subtus distinctis patule adscendentibus prope marginem confluentibus sed nervo submarginali nullo, coriaceo-membranaceis, stipulis ovato-lanceolatis glabris vel subpuberulis, receptaculis axillaribus geminis sessilibus globosis glabris, bracteis 3 obtusis.

HAB. In India orientali, Java.—Colitur in hort. bot. Species cum variis vario modo confusa! Specimina mea cum *Thunb.* descriptione omnina quadrant. In hortis etiam suo tempore jam cultam observavi.

Petioli ½-1½ cent. longi, haud crassi, subteretes, antice anguste sulcati, sulco versus apicem dilatato. *Folia* forma et magnitudine variabilia, minora quandoque subrotundata, 4-8 cent. longa, 3-5½ lata margine lævi destituta. *Ramuli* nascentes et receptacula nascentia pilis teneris inspersa. *Stipulæ* 1-1½ cent. longæ. *Receptacula* pisi magnitudinis.

Huc pertinere videtur "*Ficus retusæ* varietas foliis acutis, Maysore 8 Apr. 1800 ab amiciss. Heyne," in *Hb. Arnott.*

Icon. Rheedei foliis paullo minoribus differt et ut videtur nervis immersis, quo etiam ad præcedentem accedit.

154. U. *microcarpum.* (Ficus microcarpa, *Linn. fil.* Ficus nitida, *Blume Bydr. p.* 455 *et* F. litoralis, *Bl. l. c. teste ipso Blume in Rumphia II. p.* 19. F. leptocarpa, *Steud. Nom.* An huc *Wall.* n. 4523 a me non exam. F. benjaminea, *Thunb. Diss.* n. 15 *et forsan Loureir.* F. nitida, *plurr. auct. nec Thunb. Zolling. pl. Jav. exsicc.* n. 665.) Ramulis crassiusculis, petiolis breviusculis teretibus sulco antico excavatis, foliis ellipticis vel ovalibus basi apiceque obtusis vel rotundato-obtusis vel obtuso apiculatis, basi sæpe subretusis, coriaceis, undulatis, supra sub lente punctatis, subtrinerviis et tenuiter venosis, venulis erecto-patulis ante marginem confluentibus, receptaculis geminis raro solitariis axillaribus sessilibus, bracteis dorso puberulentis.

Hab. In Java, *Thunb.*, *Bl.*, *Zoll.!* et aliunde in *Archipel. Ind.*, nam fortassis huc referenda Varinga rubra, *Rumph. Hb. Amb. Tom. III. Tab.* 86.

Celebris arbor ad Bata-tulies Javæ e duobus speciebus intime coalitis constat: *Ficu benjaminea vera*, et *F. microcarpa, Linn. fil.;* unde *Thunbergii* error explicandus qui hanc pro *F. benjaminea* sumsit, dum contra plures auctores veram *F. nitidam, Thunb.* cum *F. microcarpa* commiscuisse videntur. (Conf. Blume l. c.)

Folia, Blumeo teste, 1½-3 poll. longa, ¾-2 lata, supra saturate viridia, subtus multo pallidiora. *Receptacula* sub anthesi turbinato-globosa, apice mammæformi invio squamis minutis formato, demum subglobosa rubella ad umbilicum viridia, ætate purpurea.

Obs. Spec. Zollingeriana omni modo cum Thb. descriptione congruunt.

155. U. *benjamineum.* (Ficus benjaminea, *Linn. Mantissa. p.* 129. *haud Thunb. diss.* 15. *Vahl. Enum. II. p.* 187. *et reliq. auct.* Ficus pendula, *Link. Enum. II. p.* 450. Varinga parvifolia, alt. sp. *Rumph. Hb. Amb. III. p.* 139. *Tab.* 90, mediocris.) Ramulis tenuibus flexuosis debilibus (dependentibus), petiolis teretibus breviusculis, foliis ovatis vel elliptico-ovatis acuminatis pergamineo-coriaceis margine lævi cinctis, venulis capillaribus horizontalibus utrinque

in nervum arcuatim decurrentem quasi unitis, receptaculis axillaribus pisiformibus sessilibus, bracteis 3 deciduis ovatis obtusis dorso sericeo-puberulis.

HAB. Ind. Or. Java, ubi autem teste Blume nunquam spontanea. Assam, *Hb. Hook.!*

Petioli $\frac{1}{3}$-$\frac{3}{4}$ pollicares, *folia* 2-3$\frac{1}{2}$ poll. longa, 1-1$\frac{1}{2}$ lata. *Receptacula* lævia glabra viridi-lutescentia, sensim purpurascentia, demum atro-purpurea. *Gemmæ* subuliformes trilineares ad apicem ramulorum.*

OBS. *Ficus striata,* Roth. l. c. p. 387 verisimillime ad hanc speciem referenda videtur, licet nec in Roxburghii operibus nec in botanicorum anglorum herbariis, excepto saltem Hookeriano, hujus speciei mentio facta sit, quæ tamen ab Heyneo ad Rothium missa fuit.

156. U. *hæmatocarpum.* Ficus hæmatocarpa, *Blume in Decaisne Hb. Timor. Nouv. Ann. du Mus. III. p.* 494.) Præcedenti valde simile, diversum ramulis minus tenuibus, junioribus compresso-triedris et perinde ac gemmæ subuliformes et foliola involucri pube obsoleta brevissima inspersis; foliis brevius et obtusius acuminatis, nervis distinctioribus ad marginem foliorum arcuatim adscendentibus (*ex Bl.*)

HAB. Tamor, l. c. in Philippinis, *Cuming!* n. 1936, quæ satis cum descript. cit. congruit.

157. U. *nudum,* n. sp.; foliis modice petiolatis ellipticis vel subovato-oblongis attenuato acuminatis, basi apiceque densiusculis tenuiter multicostiveniis, venulis crassiusculis parvis, 2 e basi subascendentibus, subcoriaceis, perulis ovato-lanceolatis (parvis) glabris, receptaculis geminis(?) sessilibus globosis, bracteis baseos deciduis (saltem nunc deficientibus).

HAB. In ins. Philippinis, *Cuming,* p. 1932!

Duabus præcedentibus arcte affine, præsertim *U. hæmatocarpo. Folia* angustiora magis attenuata. *Receptacula* intus bracteolata. *Flores* sessiles vel pedicellati, tubuloso-clavati 3-partiti fusci.

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* Linnæi character specificus l. c. eximius; foliis ovatis acuminatis transverse striatis margine lævi, quibus optime probatur, pl. Thunb. a vera specie Linnæana distinctissimam esse.

158. U.? *cuneatum.* (Ficus cuneata, *Wall, List.* n. 4534.) Foliis breviter petiolatis ovalibus basi subcuneatim acutis, apice retusis, æquilateris integerrimis pergamaceis utrinque nitidis, subtus (in sicco) subfuscescentibus, subaveniis, venulis teneris capillaribus vix prominulis, stipulis lineari-lanceolatis membranaceis glabris.

Hab. Amherst, Ind. Or. *Wall. !*

Rami ramulique teretes fuscescentes glabri læves. *Petioli* semiteretes vix 5 mm., *folia* 4-6 cent. longa, 2-2½ lata. *Stipulæ* parvæ.

§ 9. *Oreosycea. Folia breviter petiolata oblonga acuminata integerrima costata, receptacula basi in longum stipitem constricta. Fl. monoici, mixti, utriusque sexus sæpe consociati, basi juncti. Perigonium triphyllum, phyllis lanceolatis fulvis. Fem. Stigma abbreviatum. Masc. Stamen 1, filamento brevi, anthera oblonga. Rectius equidem distinctum genus.*

159. U. *nervosum.* (Ficus angustifolia, *Roxb. Fl. Ind. III. p.* 554. *Wight, Icon. Tab.* 660*!* Ficus montana, *Roxb. Hb. Madr. Wall. List.* n. 4514 (an et *F. undulata* Hb. Ham. e Goalpara, et *F. Grossularia,* Hb. Ham. e Borybori? a me non visa.) F. nervosa, *Heyne in Roth, l. c. p.* 588. Ramulis petiolisque junioribus pube tenerrima appressa inspersis, foliis alternis lanceolato-oblongis acute acuminatis basi acutiusculis integerrimis margine incurvo subundulatis, coriaceis lævibus costis crassis utrinque pluribus (10) patulis ante marginem confluentibus venulisque tenuioribus subtus prominentibus, receptaculis geminis axillaribus vel ad ramos aphyllos, subglobosis in stipitem longum basi tribracteatum constrictis glabris, ore marginato intus bracteis occluso.

Hab. Silhet, *Wall. !* Assam, *Hb. Hook. !*

Petioli 1 cent., *folia* 15-22 cent. longa, 5-fere 6 lata.

Spec. Heyneanum Herb. Arnott, exactissime cum Wallichianis quadrat. Rothii descriptio l. c. satis bona.

160. U. *modestum*, n. sp.; ramulis puberulis, foliis modice petiolatis rigido-coriaceis adultis glabris, ovato-ellipticis subinæquilateris, obtusiuscule acuminatis, basi vulgo rotundatis subtrinerviis, et utrinque 6-12-costatis, costulis subtus prominentibus ante marginem conjunctis, receptaculis geminis obovato-globosis adultis glabris stipitem subpuberulum æquantibus.

Hab. Ind. Orient. *Wight*, in Hb. Arnott.

Præcedenti certe valde affine, foliis autem distinctissimum. *Petioli* 2, *folia* 8-9 cent. longa, 4-5 lata lævia, sub lente pilis rarissimis inspersa. *Stipulæ* ½ cent. conico-convolutæ sericeæ.

E. Urostigmatis *species, quarum patria incognita.*

161. U. *planicostatum.* (Ficus planicostata, *Kth. et Bouché, l. c. p.* 16.) Glabrum; ramulis rectiusculis teretiusculis, foliis oblongis acuminatis, ima basi obtusa cordatulis, subquinquenerviis, integerrimis undatis, nervis primariis remotis costaque supra acutangulo-prominulis, subtus planiusculis, membranaceis, subpellucido-reticulatis, junioribus pellucido-punctulatis, supra satiate viridibus, subnitidulis; gemmis terminalibus conico-subulatis, rectiusculis, receptaculis.

"*Folia* 43-5½ poll. longa, 24-28 lin. lata. *Petioli* subpollicares." Col. in H. berol.

162. U. *diospyrifolium.* (Ficus diospyrifolia, *Kth. et Bouch. l. c.*) Glabrum; ramulis rectiusculis, foliis longe petiolatis oblongis acuminatis, basi rotundatis, subquinquenerviis, integerrimis, nervis primariis remotis costaque supra prominulis, subtus prominentibus, membranaceis, pellucido-reticulatis et punctulatis, utrinque nitidis, subtus pallidioribus; gemmis terminalibus conico-subulatis leviter curvatis, receptaculis. . . .

In H. berol. sub nomine *F. infectoriæ*, haud *Willd.* et *F. laurifoliæ*, haud *Lam.* colitur.

Folia 6-7¼ poll. longa, 2¼-2¾ poll. lata. *Petioli* 2-2¼ poll. longi.

163. U. *Huegelii.* (Ficus Huegelii, *Kth. et Bouch. p.* 15.

F. macrocarpa, *Hugel in Hort. berol. haud Blume.*) Glabrum; ramulis rectis obsolete trigonis, foliis longe petiolatis oblongis acutis, basi leviter cordatis, subseptemnerviis, nervis primariis tenuibus approximatis, costa crassa subtus valde prominente, coriaceis, epunctatis, pellucido-reticulatis, supra atro-viridibus, nitidis; gemmis terminalibus conico-subulatis; elongatis, rectiusculis; receptaculis....

Folia 10-11 poll. longa, 4-4½ lata. *Petioli* subquadripollicares.

164. U. *anacardiifolium.* (Ficus anacardiifolia, *Kth. et Bouch. l. c. p.* 15. F. macrophylla, *Hort. berol. nec Pers.* F. palustris, *Hort. berol.*) Glabrum; ramulis rectis teretibus; foliis petiolatis oblongo-vel obovato-ellipticis apice obtusis, rotundatis vel acutiusculis, basi subcuneatis et trinerviis, integerrimis, nervis primariis tenuibus, approximatis, costa utrinque, præsertim subtus prominente coriaceis, obsolete pellucido-punctulatis, supra nitidis; gemmis terminalibus conico-subulatis leviter curvatis; receptaculis.

Col. in H. berol. *Folia* 4½-6 pollicaria, 2¼-3½ lata. *Petioli* 8-15 lin. longi.

165. U. *splendens.* (Ficus splendens, *Kth. et Bouché, l. c. p.* 14.) Glabrum; ramulis rectiusculis teretiusculis; foliis longiuscule petiolatis, subobovato-ellipticis obtusis basi subcuneatis, integerrimis, nervis primariis tenuibus, approximatis, costa subtus convexo-prominente, coriaceis, pellucido-punctulatis, supra nitidis; gemmis terminalibus conico-subulatis, rectiusculis; receptaculis."

Col. in H. berol. sub nomine *F. sylvestris.*

166. U. *eriobotryoides.* (Ficus eriobotryoides, *Kth. et Bouch. l. c. p.* 14.) Ramulis rectiusculis teretiusculis gemmisque terminalibus ferrugineo-hirsutis; foliis longiuscule petiolatis, elongato-subovato-oblongis, abbreviato-acuminatis, inferne cuneato-angustatis, integerrimis, nervis primariis remotis costaque subtus convexo prominentibus, coriaceis, supra nitidis, epunctatis, petiolisque glabris; receptaculis.....

Col. in H. berol. sub nomine *F. Afzelii*, nec? G. Don.
Folia 10-12 pollicaria, superne 3-3½ poll. lata. *Petioli* 3-pollicares.
167. U. *griseum*. (Ficus grisea, *Vahl, Enum. II. p.* 194.)
Hab.? In Herb. Juss. *Vahl.*

(*To be continued.*)

Sur la Famille des Linées; *par* J. E. Planchon, *Docteur-ès-Sciences.*

La figure du *Roucheria calophylla* récemment publiée dans ce journal (Vol. 5. Tab. II.) livrait à la pénétration des botanistes le secret des affinités de ce genre. Pour rendre la question embarrassante, il aurait suffi d'isoler du port de la plante les détails de ses caractères floraux. Des rameaux comprimés, des feuilles distiques à surface vernissée, où des lignes arquées et convergentes marquent long-temps les plis de vernation du limbe, tout dans l'aspect général annonce un *Erythroxylon* ou une *Humiriacée.* D'autre part, un calice à cinq pièces imbriquées, cinq pétales minces et fugaces, dix étamines légèrement monadelphes, des glandes jaunâtres confondues avec la substance des filets, des anthères sans connectif sensible, cinq styles libres dont l'extrémité stigmatique se dilate en forme de demi-coupe, deux ovules suspendus de l'angle interne de chaque loge; en un mot, tout ce que l'œil saisit dans nos détails analytiques, semble calqué, à quelques modifications près, sur la fleur bien connue des Lins. Qu'on suppose, d'ailleurs, au *Roucheria* des stipules intra-axillaires et soudées, au lieu d'être latérales et libres; qu'on donne à l'onglet de ses pétales le curieux appendice qui distingue ceux des *Erythroxylon*, on comble ainsi tout l'intervalle entre ces deux genres; tandis qu'une simple addition de substance au connectif des anthères, un disque plus nettement dessiné et libre au-dedans du tube staminal, la soudure des styles et la formation d'une fausse cloison divisant chaque loge en deux logettes superposées, ces modifications de forme, plus que d'essence des organes sont les seules qui distinguent notre genre des *Humirium* dont les rameaux se confondraient avec les siens. Ainsi s'établit sur des évidences palpables la connexion intime, si non la fusion absolue de trois familles qu'on songe à peine à comparer l'une à l'autre : les *Linées*, *Erythroxylées*, et *Humiriées*.

On ne saurait juger des Lins comme genre sans embrasser sous leurs sections respectives la masse de leurs espèces ; de même, pour connaître les connexions de leur famille, il s'agit avant tout d'en rassembler les membres épars. L'*Hugonia* qui se présente le premier, erre jusqu'ici sans place certaine, tantôt sous ses propres couleurs, plus souvent parasite chez d'autres groupes, et déguisant sous les traits bizarres d'une liane les signes ineffaçables de sa plus humble parenté. Si la règle inflexible mais souvent arbitraire de son système n'avait réprimé les inspirations de son tact, Linnæus aurait pu mettre ces deux genres, *Hugonia* et *Linum*, dans la monadelphie-pentagynie, et par suite, l'habitude de les voir l'un près de l'autre aurait peut-être ouvert les yeux des botanistes sur la conformité de leurs traits ; même symétrie des pièces florales, même estivation tordue des pétales, mêmes glandes greffées dans la substance du tube staminal, mêmes stigmates, même nombre et direction des ovules, même disjonction septicide des carpelles. Nos Lins, il est vrai, sont ou des herbes grèles, ou tout au plus des sous-arbrisseaux à base ligneuse et à branches raides ; les *Hugonia* sont, au contraire, de vraies lianes grimpantes (mais non volubiles) dont les feuilles penninerves souvent bordées de dents glanduleuses ou couvertes d'un duvet soyeux rappellent certaines Passiflorées anomales d'Afrique ;* tandis que leurs vrilles axillaires roulées en crosse imitent la forme comme elles remplissent les fonctions des crochets de quelques *Strychnos*, des *Uncaria*, des *Artabotrys*, et des *Ancistrocladus*. Mais la présence même de ce caractère chez des plantes d'ailleurs si diverses, en détruit l'importance comme signe d'affinité; elle nous le montre plutôt comme un de ces traits qui se lient aux mœurs de certains êtres, sans s'étendre à leurs alliés les plus proches dont l'existence suppose à leurs organes des modifications inverses. Ainsi le *Convolvulus soldanella* rampe sur nos sables maritimes; d'autres espèces grimpent dans nos haies; celles-ci étalent sur le sol leurs branches grèles, le *Conv. cneorum* les relève en touffe; et sous le climat sec et chaud de l'Orient, des buissons épineux réclament encore le nom peu mérité de *Convolvulus*. De même l'*Hugonia* peut grimper dans les forêts de l'Inde et de l'Afrique tropicale; les Lins du Népal s'élever en arbustes; ceux de la région des oliviers être des herbes dans les champs ou les gazons, et des sous-arbrisseaux sur les collines sèches; tandis que le *Linum gallicum* et la délicate *Radiole* sont les chétifs représentants de leur famille dans les bruyères humides du Nord.

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* Entr'autres une espèce de *Smeathmannia* de Sierra Leone qui sera décrite par le Docteur J. D. Hooker.

Le second genre qui réclame une place à côté des Linées sera décrit plus loin sous le nom de *Durandea*. Il est fondé sur une plante de la Nouvelle Calédonie, recueillie par Labillardière et communiquée par Mr. Webb à Sir W. Hooker. C'est un arbuste (ou un arbre?) dont les feuilles alternes, lancéolées, penninerves, glabres et noircissant légèrement par la dessication, les fleurs en corymbes et les pétales coriaces rappellent le curieux genre *Ixionanthes*, qu'on place parmi les *Ternstrœmiacées*, mais qui, dans le fait, est le noyau central d'un petit groupe dont l'histoire sera rattachée, comme une sorte de corollaire, au présent mémoire. Cependant, malgré ces ressemblances extérieures, le *Durandea* s'éloigne des *Ixionanthées* par ses styles libres, et, sauf l'absence de crochets axillaires, la consistance de ses pétales et le défaut de glandes du disque floral, il possède les caractères essentiels de l'*Hugonia*.

Qu'on se figure maintenant la tige grêle et dénudée d'un *Trientalis* couronnée d'un bouquet de feuilles inégales;

les stipules scarieuses d'un *Sauvagesia*, la grappe spiciforme d'un *Plumbago* et son calice à pièces linéaires bordées de glandes pédicellées; les pétales d'un *Frankenia* avec l'appendice lamelliforme de leur onglet; l'appareil staminal et le pistil d'un *Linum* avec les graines périspermées de l'*Hugonia;* tous ces traits sont combinés dans la jolie plante que le Docteur Wallich découvrit, en 1821, sur une des montagnes du Népal, et qu'il distribua depuis, parmi les riches collections de la Compagnie Anglaise des Indes, sous le nom d'*Anisadenia saxatilis*. Sa dénomination générique désigne heureusement l'asymétrie du disque floral, qui se trouve, chez elle, réduit à trois glandes inégalement développées, au lieu de cinq égales que suppose la loi de régularité et de symétrie. Long-temps avant de connaître l'excellent dessin qu'en a publié M. Fenzl, je crus saisir en elle un lien réel entre les *Frankenia* et les *Sauvagesiées*, et je m'empressai de communiquer à mon maître M. Aug. de St. Hilaire cette confirmation d'un rapprochement qui lui est dû. Ainsi j'arrivais sans m'en douter aux conclusions du mémoire de M. Fenzl; non pas, néanmoins, sans éprouver quelque répugnance à réunir dans un même groupe le *Frankenia* à feuilles connées et sans stipules, à calice tubuleux, à anthères introrses, et les élégantes *Sauvagesiées* qui présentent les caractères inverses. Aujourd'hui je ne rappelle ma première opinion que pour rendre justice à celle de M. Fenzl, puisque je crois la changer pour une meilleure en plaçant l'*Anisadenia* parmi les *Linées*. La justesse de ce rapprochement ressortira d'elle-même des admirables analyses de M. Fenzl. Elle est confirmée par une observation de l'ingénieux Salisbury constatant chez le *Linum perenne* la même asymétrie des glandes du disque qui frappe chez l'*Anisadenia;* fait que j'ai pu retrouver sur les fleurs d'une espèce de *Reinvardtia (Lins trigynes* des auteurs) aussi bien que sur celles du *L. perenne.*

Ainsi la famille des *Linées*, au lieu d'être représentée par un type presque uniforme, gagne par l'addition de trois genres une variété de structure qui doit multiplier en proportion ses rapports avec d'autres groupes. Tant de genres se pressent sur ses limites, qu'un peu d'artifice devient nécessaire pour en montrer les positions relatives ; de sorte que j'ai taché d'atteindre ce but par une méthode suggérée par M. Strickland et très heureusement appliquée par M. Lindley aux familles de son excellent "*Vegetable Kingdom.*" Dans le tableau ci-dessous, les mots imprimés en petites majuscules représentent les genres de *Linées ;* ceux qui le sont en lettres romaines désignent les groupes qui leur sont intimement alliés ; enfin, des caractères italiques distinguent ces familles qui, sans avoir avec les *Linées* une affinité immédiate, sont néanmoins en contact avec les groupes qui les avoisinent sur le tableau. Des lignes punctuées horizontales tracent les connexions directes et réciproques des genres et familles ; dans le cas de rapport moins intime les noms sont simplement superposés.

TABLEAU DES AFFINITÉS DES LINÉES.

Reaumuria
Hololachne.... Velezia (Caryophylleæ)
Tamarix
Frankeniaceæ ....ANISADENIA....Sauvagesieæ....*Ochnaceæ*
Elatineæ........RADIOLA... *LINUM* ....REINWARDTIA ....Turneraceæ
Crassulaceæ *Droseraceæ, Portulaceæ*
HUGONIA....Smeathmannia (Passifloreæ)
Erythroxyleæ...... .....ROUCHERIA....Humiriaceæ
Chlenaceæ
DURANDEA ... Ixionantheæ
Hypericineæ ....Bonnetieæ....Ternstræmiaceæ

Pour justifier les vues qui sont présentées sans preuves, dans ce tableau, il suffira presque de définir le groupe, les sections et les genres des *Linées,* sujet peu attrayant en luimême, mais auquel s'adapte heureusement la concision des définitions techniques.

CHAR. ESSENT. LINEARUM.—Flores hermaphroditi, regulares, 4-5 meri. Sepalorum æstivatio quinconcialis ; petalorum convoluta. Stamina numero petalorum dupla, omnia fertilia, nunc alterna 5 castrata ; filamentis basi plus

minus connexis; antheris introrsis. Glandulæ disci 5-10 tubo staminum extus adnatæ v. innatæ rarius. Ovarium 3-5 loculare, loculis sub apice anguli interni 2-ovulatis. Ovula anatropa, collateraliter appensa. Styli 3-5 a basi v. saltem infra apices stigmaticos indivisos distincti. Embryo intra albumen copiosum v. parcum rectus. Pedicelli infra florem articulati, articulis tamen rarissime sponte ab invicem secedentibus. Stipulæ 0, v. laterales, liberæ, caducæ.

Sect. I. EULINEÆ.—Stamina alterna sterilia. Glandulæ disci 4-5, staminibus extus, adnata, nunc abortu pauciora. Capsulæ loculi septo spurio dorsali verticali plus minus incomplete v. rarissime complete bilocellati. Lamina albuminis tenuis.

Gen. 1. **Radiola**, *Dill.*—Flores 4-meri. Sepala 3-dentata.—Herbula Europæ totæ et Mauritaniæ, foliis oppositis, exstipulatis, cyma repetito dichotoma.

2. **Linum**, *L.* — Flores 5-meri. Sepala indivisa. Petala nuda, nunc sub anthesi unguibus connata.—Herbæ v. suffruticuli, Cosmopolitani, e plagis glacialibus et zonæ tropicæ regionibus demissis tantum exules, habitu sæpius rigido, foliis alternis v. oppositis integris; nervis (si plures adsint) longitudinalibus; stipulis nullis v. glanduliformibus; cymæ ramis sæpius demum secundis et remotifloris; pedicellis semper extra-axillaribus.

3. **Reinwardtia**, *Dumort.*—Pistillum in flore pentamero 3-4-merum. Petala intus supra unguem ligulis 2-denticuliformibus appendiculata! — Frutices Peninsulæ Indiæ Orientalis et Napaliæ, foliis lanceolatis, penninerviis, plus minus conspicue serratis; stipulis minutis, membranaceis, caducis; pedicellis cymosis v. subsolitariis bracteatis.

Sect. II. HUGONIEÆ.—Petala 5, nuda. Stamina 10 fertilia. Fructus (ubi notus) nucamentaceus; loculis (abortu) monospermis, non septulatis. Albumen non parcum.

Gen. 1. **Hugonia**, *L.*—Petala membranacea. Glandulæ disci 5-staminibus extus adnatæ. Stigmata semicupulata.—Frutices Indiæ, Africæ tropicæ et insularum Mascarensium incolæ, scandentes, foliis alternis, penninerviis, serratis, nunc pube etersibili sericeis v. incanis; stipulis indivisis v. in lacinias subulatas sectis; corymbi terminalis pedunculis 2 infimis in uncos spirales convertis.

2. **Durandea.**—Petala (nondum explicata) crassa; glandulæ disci 0. Styli linea antica stigmatici.—Frutex v. arbor? Novo-Caledonicus, exsiccatione leviter nigrescens, ecirrhosus, glaber, foliis alternis, serratis, lucidis, glabris, penninerviis; stipulis minutis; corymbis terminalibus.

3. **Roucheria.**— Petala tenera, fugacia. Glandulæ disci 10? substantiæ tubi staminei innatæ. Stigmata semicupulata.—Frutices v. arbores Malayani et Guyanenses, ramis compressis axillisque foliorum vernicifluis, foliis æstivatione marginibus plicato involutis, alternis, penninerviis, glaberrimis, lucidis; stipulis minutis; corymbulis in fasciculos axillares condensatis v. rarius in corymbum terminalem laxiusculum collectis.

Sect. III. ANISADENIEÆ.—Petala secus unguis angusti faciem internam lamina verticali appendiculata. Stamina 5-fertilia, denticulis totidem sterilibus interjectis. Glandulæ disci præter unam valde evolutam duasve minutas majori rarius adjectas plane deficientes. Stigmata semicupulata. Capsula, loculis eseptatis, abortu 1-spermis. Embryo in axi albuminis rectus.

Gen. unicum. **Anisadenia.**—Herba montium Napaliæ incola, rhizomate brevi subtuberoso perennans; habitu quodammodo Trientalis; foliis versus apicem caulis simplicis approximatis, alternis, lanceolatis, margine crassiusculo, subrepando-serratis, penninerviis, subtus pilis simplicibus adpressis albido-sericeis; stipulis scariosis, majusculis, nervosis, caducis; racemo spiciformi terminali, multifloro; sepalis linearibus subglumacis, nervosis, secus nervos marginales glandulis stipitatis uniseriatis, more Plumbaginis, ornatis.

Ayant pris dans les descriptions qui précèdent une idée générale des Linées, il nous reste à considérer celles d'entre les modifications de leurs organes qui sont les signes de leurs affinités avec d'autres groupes.

Le calice ne présente rien de remarquable, si ce n'est chez l'*Anisadenia*, où ses pièces linéaires portent sur chaque nervure marginale un rang de glandes pedicellées ; caractère qui joint à l'inflorescence, aux pétales unguiculés et aux styles libres, dévoile une remarquable tendance de ce genre vers les *Plumbaginées*. Si cette tendance mérite le titre d'affinité ou celui d'analogie, est une question que je ne suis pas entièrement préparé à résoudre, tant que la place des *Plumbaginées* reste elle-même un sujet de discussion. D'un côté, en effet, peu de botanistes voudront admettre avec De Candolle que les *Plumbago* n'ont pas de corolle ; de l'autre, leur affinité avec les *Plantains* me paraît aussi peu évidente que peu solidement établie. La composition des ovules est essentiellement différente chez ces deux familles ; ceux des *Plantains*, comme ceux des *Primulacées*, consistent en un nucelle sans enveloppe ;* ceux des *Plumbaginées*, au contraire, possèdent dans leurs deux téguments un caractère qui serait exceptionnel parmi les *Monopétales* par excellence,† et qui les rapproche plutôt des *Frankenia*, dont l'ovaire uniloculaire et les funicules ascendants pourrait se ramener, sans beaucoup d'effort, à représenter celui des *Plumbaginées*, où l'unité d'ovule ne se conçoit guères que par l'idée d'un avortivement constant de ceux que suppose l'ovaire à cinq carpelles. Si l'on admettait donc une affinité même indirecte entre les *Plumbaginées* et les *Frankenia*, ce rapport viendrait confirmer ceux que je reconnais, après M. Fenzl, entre le dernier genre et l'*Anisadenia*.

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* Il est vrai que M. Barnéoud (Recherche sur les Plantaginées et Plumbag., Paris, ann. 1844) a cru retrouver après M. Mirbel, deux téguments chez les ovules des *Plantains*. Mais comme leur existence a échappé à mes recherches les plus attentives, je soupçonne que l'autorité du savant professeur a, dans ce cas, égaré l'œil ou la confiance de M. Barnéoud. Il n'est pas surprenant, du reste, que M. Mirbel ait pensé voir *obscurément* chez les *Plantains*, des parties qu'il a admirablement représentées chez d'autres plantes, et qu'il supposait exister à peu près chez toutes. Car, si le *Juglans* et le *Myrica* lui avaient fourni des exemples d'ovule, a une seule enveloppe, l'existence d'un nucelle ne m'était pas même soupçonnée, avant que M. Ad. Brongniart l'eut mise en évidence dans le cas du *Thesium*.

† Je comprends sous ce nom (par lequel je ne prétends pas désigner un groupe naturel) les *Aggregatæ*, *Campanulinæ*, *Caprifolia*, *Contortæ*, *Nuculiferæ*, *Tubifloræ*, *Personatæ* et une partie des *Petalantheæ* d'Endlicher.

Chez les *Reinwardtia* (qui sont les lins trigynes de beaucoup d'auteurs) l'onglet de chaque pétale porte au sommet de sa face interne deux languettes triangulaires non contigües l'une à l'autre, et qui rappellent par leur position les lamelles souvent frangées des *Silenées*, les appendices plus compliquées des *Erythroxylon*, et mieux encore ceux des *Reaumuriées*, plantes qu'une heureuse inspiration de *Linnæus* tirée de l'oubli par le Professeur Ehrenberg, rattacha au groupe des *Tamarix*. Cette première coïncidence, jointe à la monadelphie des étamines, à la nature du disque, aux feuilles ponctuées, à la symétrie des pièces florales, explique pourquoi les *Tamariscinées* occupent une place dans notre tableau des affinités des *Lins*, et comment l'histoire du premier groupe suivra naturellement celle du second.

Au lieu d'être formé de deux pièces comme ceux des *Reinwardtia*, l'appendice des pétales de l'*Anisadenia* consiste en une étroite lamelle membraneuse qui occupe la face interne de leur onglet, et que l'analogie nous permet de considérer comme formée par la soudure de deux feuillets, analogues aux deux languettes juxtaposées des pétales des *Frankenia ;* ce qui concourt avec l'ensemble des caractères, à fixer les *Frankeniacées* entre les *Linées*, les *Tamariscinées* et les *Silenées*.

Des pétales membraneux et fugaces seraient un des traits communs à tous les genres de *Linées*, si le *Durandea* ne présentait d'une manière frappante les caractères opposés. Heureusement, cette curieuse anomalie, sans affecter les rapports évidents de la plante avec les *Hugonia* et le reste des *Linées*, en trahit la remarquable tendance vers les *Ixionanthées* dont les pétales prennent sous le fruit la consistance et la texture fibreuse du bois !

L'habitus et les caractères de végétation ont déjà trouvé dans notre rapide aperçu des genres et des sections des

Linées, la place que leur importance mérite. C'est encore en combinant leurs nuances avec celle de l'organisation florale que je vais tâcher de distribuer en coupes naturelles les nombreuses espèces du genre *Linum*. Sans doute, l'ordre de ces coupes présentera les défauts inévitablement attachés à une série linéaire. Mais ces défauts s'effacent presque entièrement, si l'on transforme la série en un cercle, en rapprochant des *Protolinum* à pétales libres, les *Dasylinum*, qui, malgré leurs pédicelles courts et l'adhérence partielle de leurs onglets, touchent aux premiers par deux points essentiels, la couleur bleue ou rose des pétales, et les stigmates linéaires.

DÉFINITIONS TECHNIQUES DES DIVISIONS DU GENRE LINUM.

SUBGEN. I. EULINUM.—Petala libera, cyanea, rosea v. alba. Pedicelli fructiferi elongati. Calyces margine eglandulosi. Glandulæ stipulares 0.—*Herbæ annuæ v. perennes; ramis virgatis; foliis alternis, nunc pellucido-punctatis.*

Series *PROTOLINUM.—Stigmata latitudine pluries longiora. sp. typicæ *L. usitatissimum*, *L. grandiflorum*, *L. nervosum.*

**ADENOLINUM.*—Stigmata capitata.—Sp. typica. *L. perenne.*

SUBGEN. II. CLIOCOCCA.—Petala libera, calyce breviora. Stigmata capitata. Septa spuria completa; unde capsula pseudo-10-locularis. Glandulæ stipulares 0.—*Herba perennans, humilis, habitu et foliis* Lycopodii selaginis, *floribus solitariis intra folia summa sessilibus.*—Sp. *L. selaginoides.*

SUBGEN. III. LINASTRUM.—Petala libera, lutea v. rarius roseo-alba. Stigmata capitata v. rarius latitudine sua duplo longiora. Sepala margine glandulosa. Pedicelli breves.

Series *DICHROLINUM.—Petala rosea alba, ungue saturatiore. Glandulæ stipulares 0.—*Fruticuli v. herbæ basi lignosæ, foliis alternis, acicularibus, confertis v. abbreviatis et 4-fariam imbricatis.*—Sp. typicæ. *L. salsoloides, L. Ortegæ.*

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* Si je ne joins pas d'initiales d'auteurs à ces dénominations, c'est

*Cathartolinum.—Petala alba, concoloria. Glandulæ stipulares 0.—*Herbula annua, dichotome-ramosa, foliis oppositis, ellipticis.*—Sp. *L. catharticum.*

***Linopsis.—Petala lutea. Stigmata capitata. Glandulæ stipulares sæpius obviæ.—*Herbæ annuæ v. perennes v. fruticuli, foliis alternis, oppositis nunquam rosulatis.*—Sp. typicæ. *L. strictum, L. rigidum, L. multicaule, L. Mexicanum, L. junceum, L. 4-folium.*

****Halolinum.—Petala lutea. Stigmata latitudine 2-plo longiora. Glandulæ stipulares 0.—*Herbæ perennes, ramis virgatis, foliis inferioribus oppositis.*—Sp. *L. maritimum, L. tenue.*

Subgen. IV. SYLLINUM.—Petala sub anthesi unguibus cohærentia. Stigmata linearia. Pedicelli fructiferi breves.

Series *Limoniopsis.—Flores lutei, rarius albi. Glandulæ stipulares sæpius obviæ. *Fruticuli v. rarissime herbæ, foliis inferioribus sæpius spathulatis rosulatis, v. saltem confertis; pube (quæ rarissime adest) eglandulosa.*—Sp. typicæ. *L. campanulatum, L. nodiflorum, L. leucanthum.*

**Dasylinum.—Flores cyanei v. rosei. Glandulæ stipulares 0.—*Herbæ annuæ v. perennes, foliis sparsis, pube sæpius densa et plus minus glandulosa.*—Sp. typicæ, *L. viscosum, L. hirsutum.*

Si j'ai multiplié les divisions du genre *Linum*, ce n'est pas pour payer mon tribut à une faiblesse assez commune qui fait créer des choses pour des noms. Le bon sens, néanmoins, veut qu'on fasse des noms pour les choses; et dès qu'on cherche à saisir quelque liaison entre les analogies

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pour dégager, s'il est possible, cette partie de mon travail de tout encombrement inutile. Ces détails de synonymie trouveront leur place à la fin, dans une revue purement systématique des *Linées*.

TABLEAU COMPARATIF DE LA DISTRIBUTION GÉOGRAPHIQUE DES LINÉES.

Aire d'extension des espèces, (par approximation.)		N.B.—Ce travail étant fait sur des cartes anglaises, la Longitude est comptée du méridien de Greenwich. GENRES	..	I. Radiola.	II. Linum.									III. Reinwardtia.	IV. Hugonia.	V. Durandea.	VI. Roucheria.	VII. Anisadenia.
		Sous-genres	..	.. ..	1. Eulinum.		2. Cliococca.	3. Linastrum.				4. Syllinum.						
		Séries d'espèces	..	.. ..	**Protolinum.*	***Adenolinum.*		**Dichrolinum.*	***Cathartolinum.*	****Linopsis.*	****Halolinum.*	**Limoniopsis.*	*Dasylinum.*					
Lat.	Long.	*Nombre absolu des espèces de chaque genre, section ou série*....	..	1	12	2	1	4	1	42	2	13	4	3	6	1	3	1
24°—35° S.	12°—41° E.	Afrique australe extratropicale. Espèces particulières....	9	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	9 espèces								
12°—24° S.	44°—50° E.	Madagascar	1	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	L. Emirnense								
20° S.	57° E.	Ile de France ou Maurice.	2	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	2 espèces			
7°—10° N.	12°—14° O.	Afrique occidentale tropicale (Sierra Leone)	2	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	H. Planchonii H. Afzelii			
6°—25° N.	67°—93° E.	Ceylan et péninsule de l'Inde	3	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	L. Mysorense	.. ..	.. ..	.. ..	.. ..	2 espèces			
8°—25° N.	67°—93° E.	Péninsule de l'Inde	1	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	R. trigyna				
24°—28° N.	82°—93° E.	Népal et Silhet	1	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	R. tetragyna				
27°—28° N.	82°—87° E.	Népal	2	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	R. repens	.. ..	.. ..	.. ..	A. saxatilis
23°—35° N.	93°—123° E.	Chine (probablement hors du tropique)	1	.. ..	.. ..	L. stelleræfolium												
1°—3° N.	102°—104° E.	Malacca, Singapore	1	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	R. Griffithii	
20°—23° S.	164°—167° E.	Nouvelle Calédonie	1	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	D. serrata		
25°—36° S.	113°—153° E.	Nouvelle Hollande extratropicale	1	.. ..	L. suædæfolium													
25°—44° S.	113°—153° E.	Nouvelle Hollande extratropicale et Terre de Diémen	1	.. ..	L. marginale													
34°—47° S.	166°—178½° E.	Nouvelle Zéelande	1	.. ..	L. monogynum													
25°—44° S.	69°—73° O.	Chili	2	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	L. Macræi L. Chamissonis								
4°—40° S.	50°—74° O.	Chili, la Plata et Andes du Pérou	1	.. ..	.. ..	.. ..	L. selaginoides											
15°—35° S.	40°—60° O.	Brésil extratropical et tropical. (Dans les marais)	1	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	L. junceum								
25°—35° S.	45°—60° O.	Brésil extratropical	4	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	L. brevifolium L. littorale L. erigeroides L. carneum								
15°—25° S.	37°—60° O.	Brésil tropical et subtropical (marais ou régions élevées)	2	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	L. palustre L. Organense								
5°—22° S.	68°—80° O.	Pérou (Andes)	2	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	L. prostratum L. polygaloides								
2° N.—4° S.	77°—81° O.	Equador (Andes)	1	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	L. oligophyllum								
1°—8° N.	52°—61° O.	Guyane	2	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	R. calophylla R. Humiriifolia	
13°—17° N.	88°—93° O.	Guatimala	1	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	L. Guatemalense								
16°—23° N.	88°—105° O.	Mexique	7	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	L. Mexicanum L. hypericifolium L. Orizabæ L. tenellum L. Coulterianum L. Schiedeanum L. scabrellum								
27°—38° N.	76°—107° O.	Texas, Connecticut, Caroline, Géorgie	1	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	L. Berlandieri								
26°—38° N.	93°—108° O.	Texas	2	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	L. multicaule L. hudsonoïdes								
27°—50° N.	60°—110° O.	Texas et Etats-Unis d'Amérique	2	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	L. Bootii L. Virginianum								
30°—54° N.	100°—123° O.	Région du Missouri, possessions britanniques (British North America), Californie	1	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	L. rigidum								
37°—57° N.	180° E.—180° O.	Amérique boréale, Kamtschatka, Sibérie, Europe centrale et mérid. (Voir le texte pour les détails explicatifs)	1	.. ..	.. ..	L. perenne												
28°—65° N.	60° E.—18° O.	Europe froide, tempérée et mediterranéenne, Mauritanie, Canaries, Madère, Islande	1	.. ..	.. ..	.. ..	.. ..	.. ..	L. catharticum									
29°—61° N.	60° E.—18° O.	Mêmes régions (moins les Canaries et l'Islande)	1	R. linoides														
29°—61° N.	60° E.—18° O.	Europe centrale et méridionale, Mauritanie, Canaries, Madère	1	.. ..	L. angustifolium													
36°—49° N.	47° E.—9½° O.	Europe centrale et mérid., Caucase, Géorgie, Syrie	1	.. ..	.. ..	.. ..	.. ..	L. tenuifolium										
12°—44° N.	70° E.—18° O.	Europe méridionale, Afrique boréale, Canaries, Madère, Abyssinie, Perse, Caboul	2	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	L. strictum L. Gallicum								
37°—49° N.	50° E.—9½° O.	Portugal ? Pyrénées ? Nice, Styrie, Moravie, Autriche inférieure, Hongrie, Turquie, Podolie, Ukraine, Caucase, Arménie, Phrygie, Carie, Lydie.	1	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	L. hirsutum					
37°—55° N.	13°—48° E.	Carinthie, Styrie, Autriche, Bohéme, Moravie, Russie centrale et mérid., Turquie, Carie, Caucase, Kurdistan	1	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	L. flavum						
37°—50° N.	16°—45° E.	Hongrie, Ukraine, Taurie, Caucase, Pamphylie	1	.. ..	L. nervosum													
45°—50° N.	16°—26° E.	Hongrie	2	.. ..	L. hologynum	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	L. capitatum						
46°—48° N.	10°—17° E.	Frioul, Carinthie, Tyrol, Bavière, Autriche	1	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	L. viscosum					
35°—46° N.	14°—48° E.	Istrie, Dalmatie, Turquie, Grèce, Crète, Cypre, Caucase, Taurus, bord orient. de la Caspienne, Asie mineure	1	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	L. nodiflorum						
34°—46° N.	36° E.—9½° O.	France mérid., Espagne, Portugal, Italie, Istrie, Taurie? Algérie	1	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	L. maritimum							
36°—46° N.	0°—15° E.	France méridionale, Italie septent., Styrie, Carniole, Espagne	1	.. ..	L. Narbonense													
36°—47° N.	7° E.—9½° O.	France centrale et mérid. et péninsule Ibérique ?	1	.. ..	.. ..	.. ..	.. ..	L. salsoloid. DC.										
43½°—44° N.	3°—4° E.	France méditerranéenne (Hérault ! et départements voisins ?)	1	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	L campanulatum						
36°—41½° N.	7° E.—2½° O.	Espagne centrale et méridionale	1	.. ..	.. ..	.. ..	.. ..	L. Ortegæ										
36°—47½°? N.	7° E.—20° ? O.	Espagne, Autriche (probablement aussi Italie)	1	.. ..	.. ..	.. ..	.. ..	L. suffruticosum										
31°—42° N.	0°—11° O.	Espagne, Portugal et Mauritanie	2	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	L. setaceum	L. tenue							
34°—37° N.	2°—11°	Mauritanie (moins Maroc)	2	.. ..	L. grandiflorum	.. ..	.. ..	.. ..	.. ..	L. corymbifernm								
34°—38° 15′ N.	15° E.—6° O.	Algérie et Sicile	1	.. ..	L. decumbens													
39°—41° N.	8°—10° E.	Sardaigne	1	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	L. Mulleri								
35°—42° N.	12½°—38° E.	Sicile, Crète, Macédoine, Syrie occidentale	1	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	L. pubescens					
35°—35° 40′ N.	23½°—26° 40′ E.	Crète	2	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	L. arboreum L. cæspitosum						
37° 45′—38° 20′ N.	23½°—24° O.	Grèce (Attique)	1	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	L. leucanthum						
40°—41° N.	32°—33° E.	Bithynie (Mont Olympe)	1	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	L. Olympicum					
37½°—38½° N.		Lydie (Mont Tmolus), Carie (Mont Cadmus)	1	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	L. aretioides						
36½°—38° N.	27°—29° E.	Carie	1	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	L. Cariense						
		Orient ? (dans l'origine?) Aujourd'hui cultures des régions tempérées du globe	2	.. ..	L. usilatissimum L. humile													
35°—37° N.	42°—48° E.	Kurdistan	2	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	L. velutinum L. Kurdicum						
26°—40° N.	45°—62° E.	Perse	2	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	L. album L. Persicum						
36°—37° N.	51°—52° E.	Mazendaran (Mont Djulfeck)	1	.. ..	L. Aucheri													
		Total des espèces	96															

To face page 599.

organiques des êtres et leur distribution sur le globe, on ne doit pas craindre de pousser l'analyse aussi loin que la nature des objets le commande et le permet. Les noms des sections et des divisions que j'appelle séries sont en eux-mêmes de peu d'importance. Il serait absurde de les faire passer dans la nomenclature parlée; mais ils ne seront pas, j'espère, hors de leur place dans un tableau destiné à présenter sous un cadre étroit la distribution géographique des Linées en connexion avec leurs affinités réciproques; l'aire d'extension de chaque espèce prise isolément est celle de l'association dont elle est membre; le nombre des représentants de chaque genre, section ou série, et ceux que renferme une région donnée; en un mot, la solution, malheureusement imparfaite, d'une des mille questions qui composent un des mille problèmes de la science.

L'usage du tableau ci-joint s'explique en partie de lui-même; les colonnes verticales renferment les espèces d'une même association, tandis que chaque colonne verticale réunit les Linées souvent hétérogènes que renferme une région donnée, dont les limites sont indiquées par ses points extrêmes de longitude et de latitude. Cependant, dans beaucoup de cas, il y aurait danger à supposer à ces limites de superficie une précision dont les conditions premières n'existent pas. Une mappe-monde ne saurait représenter le cours des ruisseaux, non plus que les faibles sinuosités d'un grand fleuve; bien moins encore, puis-je prétendre à une minutieuse précision, au milieu du vague des données géographico-botaniques que fournissent les plus riches herbiers. Les chiffres en question ne sont donc introduits dans le tableau que comme des points culminants d'où l'œil saisit l'ensemble d'une région sans appeler l'aide de la règle et du compas. Le doute sert mieux la science, que ne fait l'ignorance déguisée; le vague qu'on déplore appelle la précision qu'on désire; et l'heureuse impulsion que la Botanique de nos jours a reçu d'un Jussieu et d'un Humboldt rapproche sans cesse l'aimable science de la distante période, où l'union de toutes ses parties dans un ensemble harmonique sera la conséquence naturelle de la précision de chacune prise à part. En attendant, il faut faire une distinction entre une précision mathématique, résultat immanquable de conventions rationnelles, et les données approximatives de ces sciences, dont la marche la plus rapide n'est qu'un heureux tatonnement dans les ténèbres de l'inconnu. L'esprit, néanmoins, dans cette marche oscillatoire aime à se reposer sur quelques points encore fermes, tels que sont peut-être, dans l'état présent de nos connaissances, les considérations générales que je vais présenter sur la distribution géographique des *Linées*.

Un coup d'œil sur notre tableau suffit pour montrer que la masse des plantes de cette famille appartient aux régions tempérées du globe. Des deux genres qui sont propres aux contrées tropicales, l'*Hugonia* donne deux espèces à l'Afrique occidentale, deux à l'Ile de France et à Bourbon, et deux à Ceylan et la Péninsule de l'Inde. On a raison de supposer que Madagascar et l'Afrique centrale et occidentale en récèlent d'autres, et l'on s'étonne de l'absence du genre dans l'Archipel Malayen dont la végétation prise en masse est si analogue à celle de Ceylan. Ce fait doit prévenir le botaniste qui s'occupe de la géographie des plantes contre le danger d'anticiper par le raisonnement et l'analogie les résultats de l'observation. Tous les degrés d'association d'espèces, doivent, comme chaque espèce en particulier, être découverts, étudiés, comparés, avant qu'il soit permis de décider quelles formes végétales se suivent et s'associent; quelles sont celles dont un coin de terre réunit les représentants et celles dont le monde entier est la patrie; quelle est la relation entre l'organisation, l'habitus, les mœurs, les affinités des êtres et le sol, le climat, les régions auxquels leur existence est liée; problème qui résume à lui seul les questions les plus ardues de la Botanique et de la Climatologie, compliquées par l'influence de ce principe qui, sans affecter sensiblement les propriétés de la matière organisée, lui communique néanmoins les propensités les plus diverses. Pourquoi le *Drosera intermedia* croit-il dans les marais de la Guyane et du Brésil comme dans l'Europe et l'Amérique septentrionale, tandis qu'il manque à la flore de l'Inde ? Pourquoi les *Barbăcenia* ne sont-ils connus que sur les montagnes du Brésil, de la Guyane et de Madagascar ? Pourquoi les *Grewia* s'avancent-ils du sud et de l'ouest de l'Afrique jusqu'à l'orient de la Chine, tandis que les *Ochna* partis des mêmes points ont leur limite orientale vers la Péninsule de Malacca ? Ces inégalités de tempérament des plantes d'où naît en grande partie la diversité de leur distribution, sont sans doute subordonnées à des lois fixes et générales que d'immenses lacunes dans le cercle de nos connaissances nous empêchent jusqu'ici de saisir. Par suite d'une exploration presque complète les botanistes ont pu constater l'uniformité de végétation des terres arctiques ; au contraire, dans le cas de ces flores dont les richesses ne sont connues que par fragments plus souvent décrits d'une manière énigmatique que comparés et identifiés l'un avec l'autre, il y a mille chances de perdre de vue les faits de distribution les plus piquants. Par exemple, tant que le genre *Roucheria* restait inédit, les botanistes ignoraient l'existence d'un genre arborescent de *Linées*, qui donne des espèces à la fois à la Guyane et la Péninsule Malayenne.

Le *L. catharticum* s'avance depuis l'Islande par toute l'Europe jusques dans le royaume de Maroc. La ligne d'extension de cette espèce dans le sens des Méridiens est par conséquent plus longue que celle d'aucune de ses congénères. L'exemple de la plus grande extension dans le sens inverse est fourni par le *L. perenne*, qui, sans atteindre la latitude de la Suède, occupe toute la largeur de l'Europe, de la Sibérie, et de cette partie de l'Amérique boréale qui s'étend des rivages de l'Océan Pacifique au versant occidental des Monts Rocheux, et même au-delà jusqu'à la baie d'Hudson.

La section des *Lins* à fleurs bleues et à stigmates linéaires dont le *L. usitatissimum* est le type, présente un fait de distribution très piquant, dans le partage inégal de ses espèces entre l'Europe, l'Afrique boréale, les régions de l'Asie situées à l'ouest de l'Indus, la Nouvelle Hollande extratropicale, la Terre de Diémen et la Nouvelle Zéelande, à l'exclusion de l'Amérique, de l'Afrique australe et de l'Inde. C'est dans les premières limites que l'analogie nous permet de chercher la patrie des Lins usuels, (*L. usitatissimum* et *L. humile*), espèces que la culture a distribuées sur tous les points des zones tempérées, qui ne prennent que par accident une apparence de liberté, et que l'homme soumit d'assez bonne heure à son empire, pour que leur origine se perde avec celle des premières institutions sociales. Cependant, puisque l'Australien va tout nu, et que le Nouveau Zéelandais emprunte ses tissus (ou plutôt ses feutres) aux *Phormium*, ce n'est pas de leurs pays que l'Europe a dû recevoir ses Lins. Il est plus naturel d'associer l'origine de ces plantes à celle des *Coquelicots* (*Pap. Rhœas*) et des *Bleuets* (*Centaurea cyanus*,) qui, comme elles, s'attachent à nos Cereales, et ont dû partir avec ces dernières du coin de l'Asie occidentale, où l'histoire place le berceau de la civilisation européenne. Le peuple Hébreu reçut sans doute ces plantes des nations qui l'avaient précédé, et tel fut probablement le cas pour les Egyptiens, malgré que Linnæus attribue à leur pays l'honneur d'être la patrie originelle des Lins cultivés.*

La section *Cliococca* représentée par une espèce à plusieurs égards anomale dans le genre, est la seule qui soit particulière à l'Amérique ; l'espèce elle-même paraît s'étendre des Andes du Pérou et du Chili à l'emboûchure du Rio de la Plata ; mais quoique les flores des deux dernières régions aient plusieurs plantes en commun, je crois que, dans ce cas, l'identité des supposés *L. saliginoides* des trois contrées mérite une nouvelle confirmation.

Le bassin de la Méditerranée et les régions adjacentes sont le rendez-vous des séries *Dichrolinum*, *Halolinum*, *Limoniopsis* et *Dasylinum*. Néanmoins dans la distribution de ses espèces, chacun de ces groupes manifeste une tendance particulière. Les belles espèces du premier affectionnent presque exclusivement le sud-ouest de l'Europe, le *L. angustifolium* étant la seule qui s'étende de l'Espagne jusqu'à l'Asie mineure, et qui s'avance vers le nord jusqu'au parallèle de Paris. Les autres forment une ligne continue depuis le département du Cher, dans la France centrale, où se montre le *L. salsoloides*, par l'Autriche, l'Italie et le Péninsule Ibérique, jusqu'au sud du royaume de Maroc. Deux autres groupes, au contraire, remarquable par la soudure partielle de leurs pétales n'envoient chacun au-delà de la Sicile vers l'ouest qu'un seul de leurs représentants; c'est, pour les *Dasylinum* à fleurs bleues ou roses le *L. hirsutum*, qui paraît atteindre les Pyrénées; pour les *Limoniopsis* à fleurs jaunes le beau *L. campanulatum*, qui est peut-être propre à la France méditerranéenne.

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* Au moins, de son *L. usitatissimum*, sous lequel la plupart des botanistes, égarés par son autorité, continuent de confondre les deux espèces dont il est ici question, espèces que Tournefort, Boerhave et, plus tard, Miller avaient parfaitement distinguées, mais trop vaguement définies.

"Linum usitatissimum inundatæ Ægypti planta est, et inde constat botanico quænam terra sit L. convenientissima, scilicet e paludibus uliginosis adducta. Verbo dicam omnes plantationes plantarum exoticarum inniti fundamento stationum, cum omnes plantæ aliquo in loco spontaneæ sint. Si itaque stationes plantarum quis perspectas habet, ex cognitione botanices facile plantas colet ; sin minus perverse agit."—*Linnæus Amœn. Acad. vol. 7. p.* 422. *Dissert. de usu hist. nat.* §. VIII.

La série *Linopsis*, se fait remarquer à la fois par le nombre de ses espèces et par l'étendue de l'aire qu'elles embrassent. Elle fournit au Cap de Bonne Espérance les neufs espèces de Lin. de sa Flore; à l'Inde orientale l'unique et chétif *Lin. Mysorense;* cinq espèces à l'Europe, à l'Afrique boréale et à l'Asie mineure; enfin, aux deux Amériques toutes celles qu'elles possèdent, si l'on fait abstraction du *L. perenne* vers le nord et du *L. selaginoides* vers le sud.

En somme, le bassin de la Méditerrannée est évidemment le pays de prédilection des Lins, puisque, à l'exception de l'anomal et solitaire *L. selaginoides*, tous les types qui représentent le genre ont fixé dans cette région leurs quartiers ou principaux ou exclusifs.

Ici je termine mes considérations générales; tout ce qui me reste à dire sur les *Linées* rentre dans le domaine de la botanique purement descriptive, et va trouver place dans la partie systématique de ce mémoire.

(To be continued.)

BOTANICAL INFORMATION.

Dr. Hooker's Botanical Mission to India.

The increased and increasing patronage which the Government of this country affords to science is a subject of high satisfaction to all Naturalists. This patronage is peculiarly evinced in the liberality with which the treasures contained in the British Museum, and those in the Royal Gardens of Kew, are rendered available to the public good. In connection with the latter establishment, we have to announce that one of the most enthusiastic votaries of Botany, whose name stands at the head of the present article, has just quitted this country to further its interests. Dr. Hooker, having brought his *Flora Antarctica*, part of the results of a previous Voyage, to a close, has been appointed by H.M. Government to investigate the vegetable productions of India, and especially of the Himalaya Mountains; and as a treaty is now in progress of negotiation between the British powers in Hindostan and the Chinese, with reference to the boundaries of Thibet, it is possible even the latter interesting region may be visited by Dr. Hooker in the course of his journey. It is with a view to this object that the distinguished Humboldt addressed Dr. Hooker in a letter, which though entirely of a private nature, we think not unsuited to the pages of a Journal of Natural History.

"Que je suis heureux d'apprendre, mon excellent ami, que vous allez pénétrer dans ces belles vallées de l'Himalayah, et même au-delà vers Ladak et les plateaux du Thibet, dont la hauteur moyenne, non confondue avec celles des cîmes qui s'élèvent dans le plateau même, est un objet digne de recherche! Comme j'apprécie cette noble ardeur qui vous fait entreprendre une nouvelle expédition hazardeuse, après avoir été dans celle du Pôle Austral qui a été si

glorieusement conduite! Votre aimable lettre du 5 Septembre m'a trouvé un peu indisposé. J'ai habité le parc de Sans Souci pendant l'absence du Roi, et un violent refroidissement m'a forcé de rentrer en ville. Mon départ pour Paris a été retardé, et j'ai pu corriger ici les derniers feuillets du 2nd volume du Cosmos qui va paraître sous peu. J'attends demain le retour du Roi et de la Reine, et je pourrai vers le 4 Oct. me mettre en route pour passer deux ou trois mois à Paris. Je commence à me consoler de l'injustice qu'on vous a faite de ne pas vous donner la chaire d'Edinbourg, car, d'après l'étendue et la variété du savoir que je vous connois, vous êtes appelé à rendre d'éminens services non seulement à la géographie des plantes, mais aussi à toutes les branches de la météorologie, comme à la géologie des formations. Vous avez l'avantage que vos vues se sont agrandies, que vous avez le goût (le sentiment) de la précision.

Je félicite, au nom de cette partie des sciences physiques à laquelle toute ma vie a été vouée, les membres du grand Corps de l'Amirauté et les 'Commissioners of Woods and Forests' du choix qu'ils ont fait, de la protection qu'ils vous accordent, et dont vous êtes si digne par vos connaissances, par la vivacité et l'ardeur de votre caractère, par la constance d'un dévouement si désintéressé! Je me reporte volontiers, dans mes souvenirs, vers ces conversations si instructives pour moi, pendant que j'avais le plaisir d'habiter une même maison avec vous à Paris: j'ai pris des notes presque sous votre dictée et j'aime à les trouver dans mes cahiers. Heureux avantage de la vieillesse qui en a si peu! Votre excellent père s'était chargé de la publication de mes plantes Cryptogames des Cordillères, et voilà le fils que je puis saluer comme un jeune ami, qui a vu les éruptions de l'Erébus, et qui va voir ce qui a fait le rêve de ma vie prête à finir.

"N'oubliez pas de m'écrire, mon cher ami, à Paris avant d'entreprendre ce magnifique voyage. Je suis avide de vos Gallapagos, mais je voudrais bien aussi que vous jettiez pour mon instruction quelques notes géographiques sur un papier, simplement quelques noms des plantes d'Europe ou d'Amérique, *Phanérogames*, non introduites par l'homme et trouvées avec certitude dans l'hémisphère austral, *non Américain.* Dites-moi aussi un mot sur votre *Cœlebogyne ilicifolia*, que Jussieu nomme une *Euphorbiacée.* Le miracle des graines muries sans étamines, continue-t-il ? Qu'en pensez-vous ?

" Comment fixer votre attention sur des objets spéciaux, lorsque, comme vous, on connoit les problèmes qu'ils s'agitent.

" Hauteurs auxquelles cessent de certaines familles de plantes.

" Le caractère de Flore Sibérienne, est-il, vers Cashemer et Ladak, si général qu'on le prétend ?

" Jusqu'à quelle hauteur y a-t-il des poissons dans les lacs ? Comparer les espèces et les rapporter.

" Etre bien attentif à la température du sol à différentes hauteurs.

" Se servir de sondes à cet effet, comparer les températures du sol entre les tropiques à 18 pouces, à 2 pieds de profondeur (Boussaingault) avec la profondeur de 20 ou 30 pieds plus au Nord.

" Eclaircir le problème de la hauteur des neiges perpétuelles à la pente méridionale et à la pente septentrionale de l'Himalayah en vous rappelant les données que j'ai réunies dans le troisième vol. de mon Asie Centrale.

" Je ne puis croire à l'uniformité et à l'ennui des Gneiss, Mica-schistes, ou formations Siluriennes de l'Himalayah.

" Faire plus d'attention aux formations Porphyriques, au Grünstein, aux Amygdaloïdes (?) aux Basaltes (?) de la chaîne.

" Si l'on est assez heureux de traverser la grande Cordillère de Kouenlun pour arriver à Yarkand, en remontant vers les sources de Chajouh affluent de l'Indus, être bien attentif au *peu* de hauteur de la plaine qui envoye les eaux à l'est, par le Tarem au Lac Lop.

" Des hauteurs barométriques ou, s'il le faut absolument, des degrés d'eau bouillante, seroient bien précieuses à déterminer dans la plaine à l'est de Yarkand.

" Variations horaires du Baromètre dans les plateaux et dans l'Himalayah même.

" Observations psychométriques pour en comparer les résultats avec l'énorme sècheresse que j'ai éprouvée dans les steppes de Sibérie.

" Températures des sources des cavernes.

" Les Insectes vont-ils moins haut que les plantes ?

" Je cesse pour ne pas vous ennuyer de choses que vous savez mieux que moi.

" Agréez vous-même, mon excellent ami, et votre respectable père Sir William, l'expression renouvellée de ma haute et affectueuse considération. Mes amitiés à votre spirituel ami Mr. Darwin dont tous les travaux me charment.

ALEXANDRE HUMBOLDT.

à Berlin le 30 Sept. 1847.

" Je n'ai pas le tems de relire mon griffonage : je vais examiner jusqu'à quel No. je possède votre belle Flore."

The most important assistance, in exploring the Botany of Northern India, is promised to our traveller by His Excellency the Governor-General, Lord Dalhousie, and by the Court of Directors of the Honorable India Company. After spending about twelve months in this undertaking, Dr. Hooker's instructions are to return in 1849 to Calcutta, and thence proceed to Singapore and Borneo. At the latter island, the valuable aid of His Excellency, Mr. Brooke, and the protection afforded by H.M.S. Meander, (commanded by the Hon. Capt. Keppel, to which ship Dr. Hooker will be attached as Supernumerary Medical Officer), will enable Dr. Hooker to fulfil the designs of the noble and enlightened First

Lord of the Admiralty, Lord Auckland, who directs that he shall pursue his botanical researches and draw up a Report on the Vegetable productions of the British Settlement of Labuan and such parts of Borneo as can safely be explored. It is especially his object to ascend, if possible, the great mountain of Keeny Baloo, supposed to be 14,000 feet in height.

Dr. Hooker embarked at Portsmouth on the 11th of November, in H.M. Steam-frigate, "Sidon," which conveys His Excellency, Lord Dalhousie, to Alexandria, *en route* for Calcutta, and he may be expected to arrive there towards the latter end of this month, (December.) Two or three months will probably be devoted to investigating the plains of Bengal, and particularly the fossil vegetable remains in the coal formations of Burdwan; and then Dr. Hooker will journey northward, perhaps to Sikkim; but his exact route must considerably depend upon circumstances which it is impossible yet to foresee.

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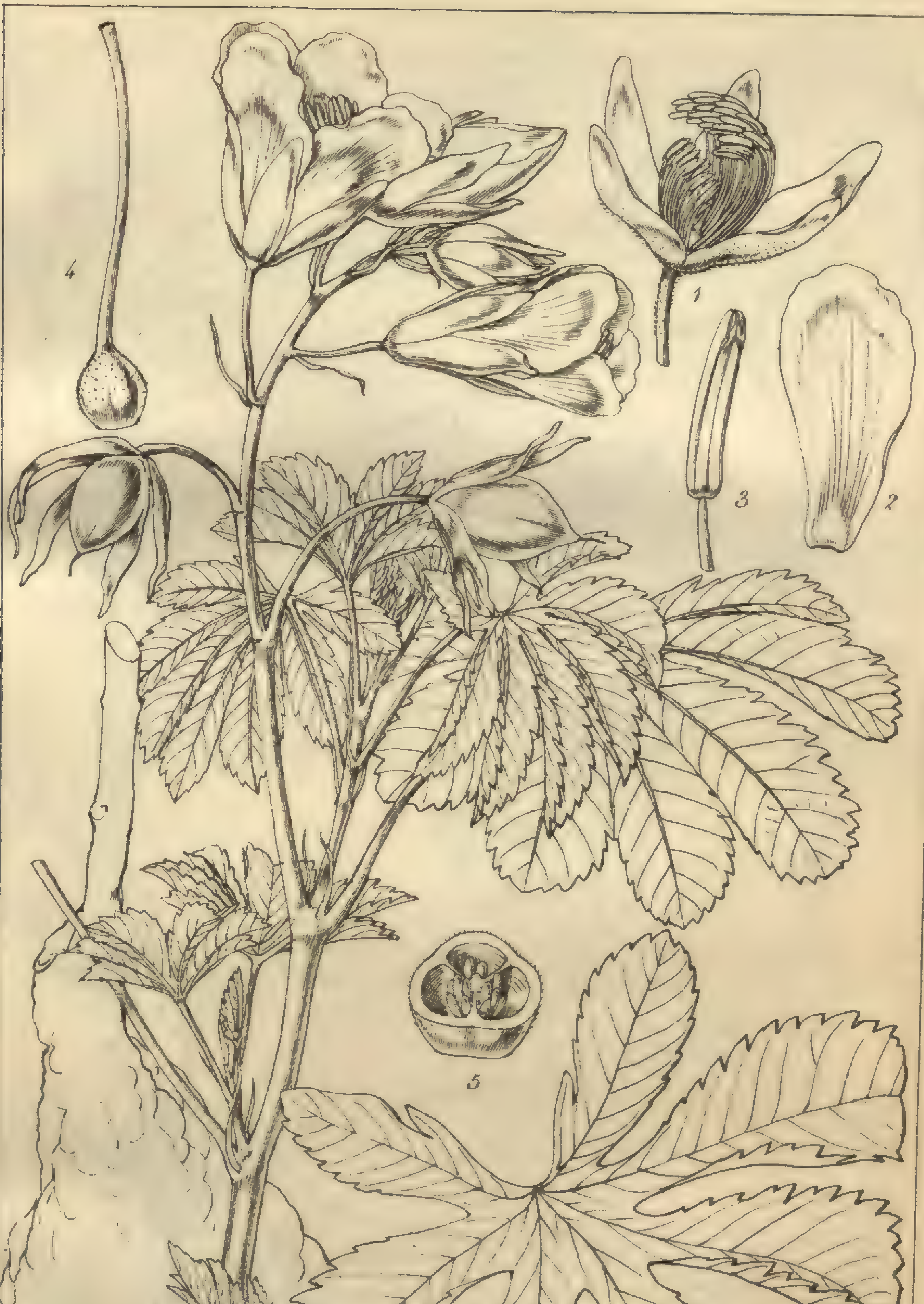

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Amoreuxia palmatifida D.C.

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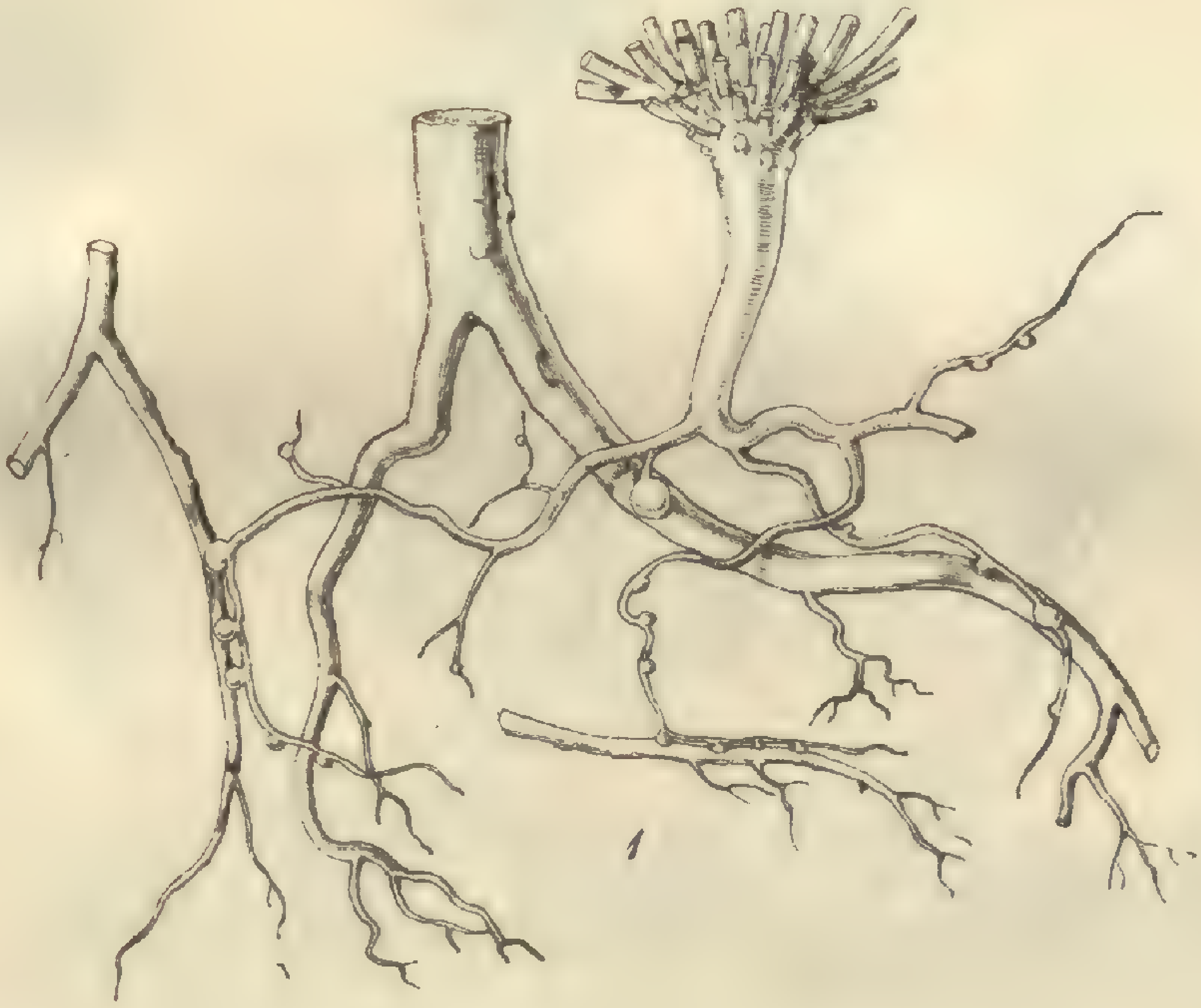
Lobbia dependens Planch.



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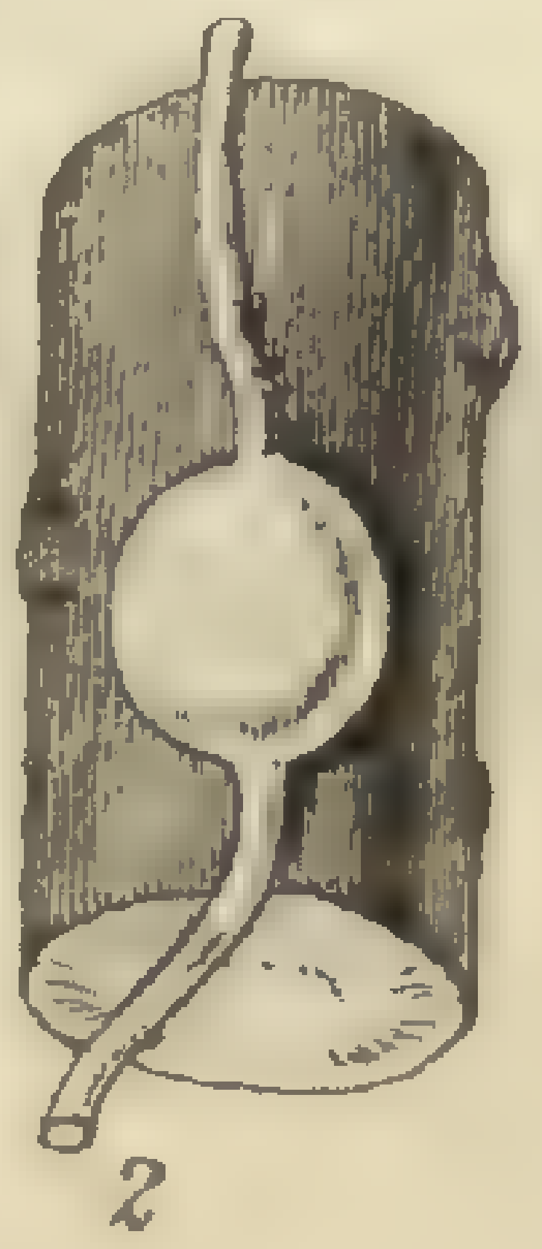

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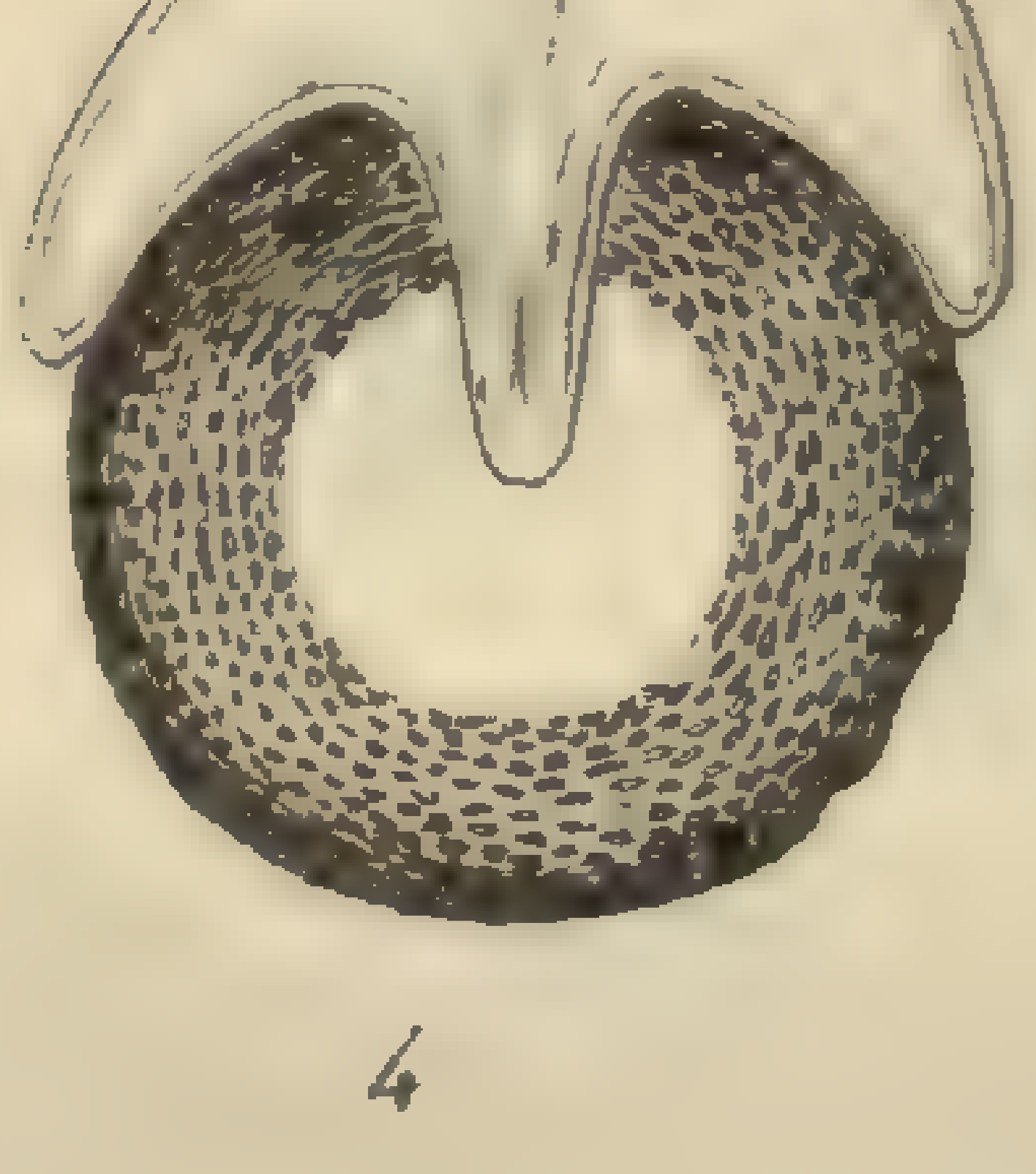

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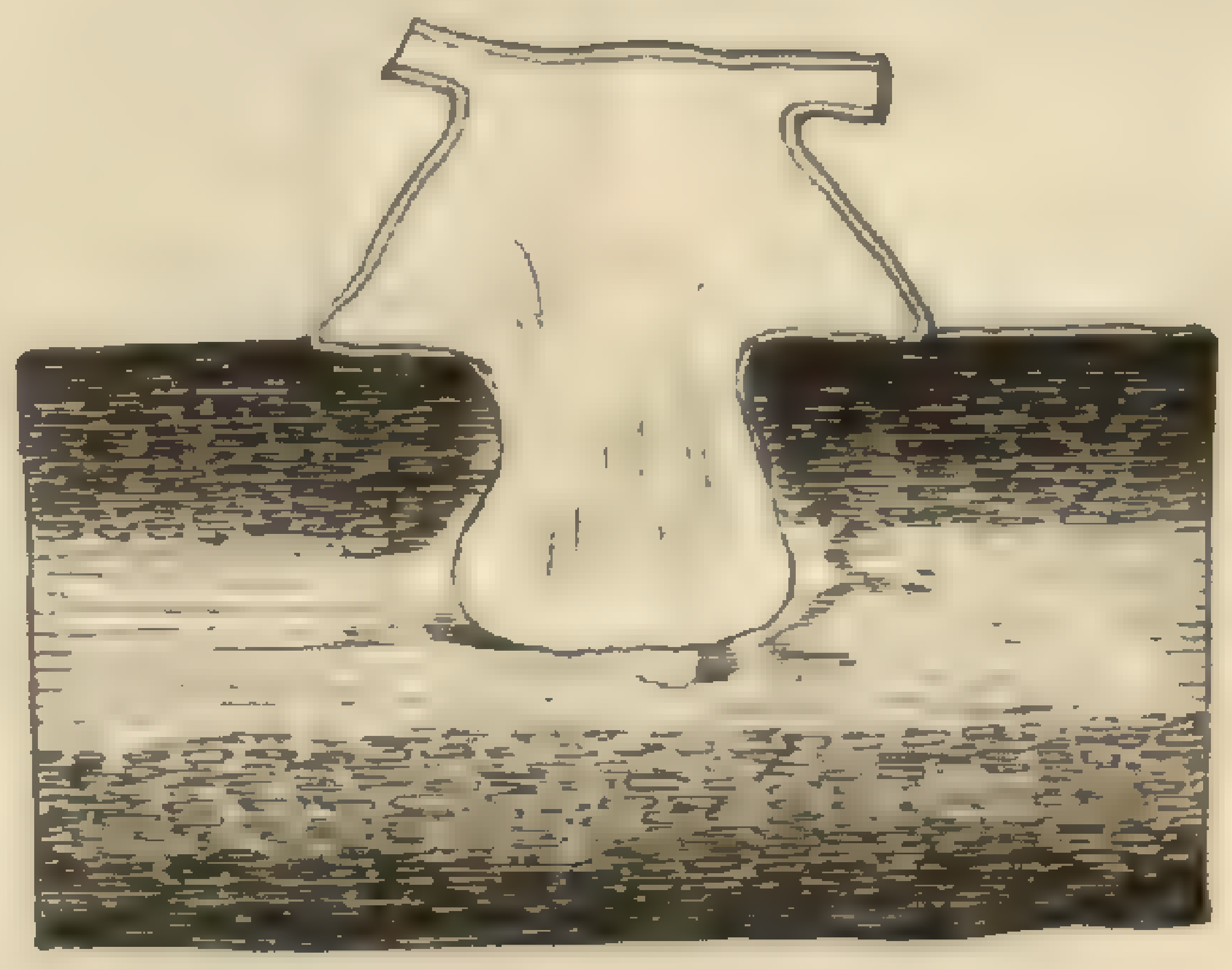

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Vesicarea Geyeri. Hook.

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Malva verticillata, L.

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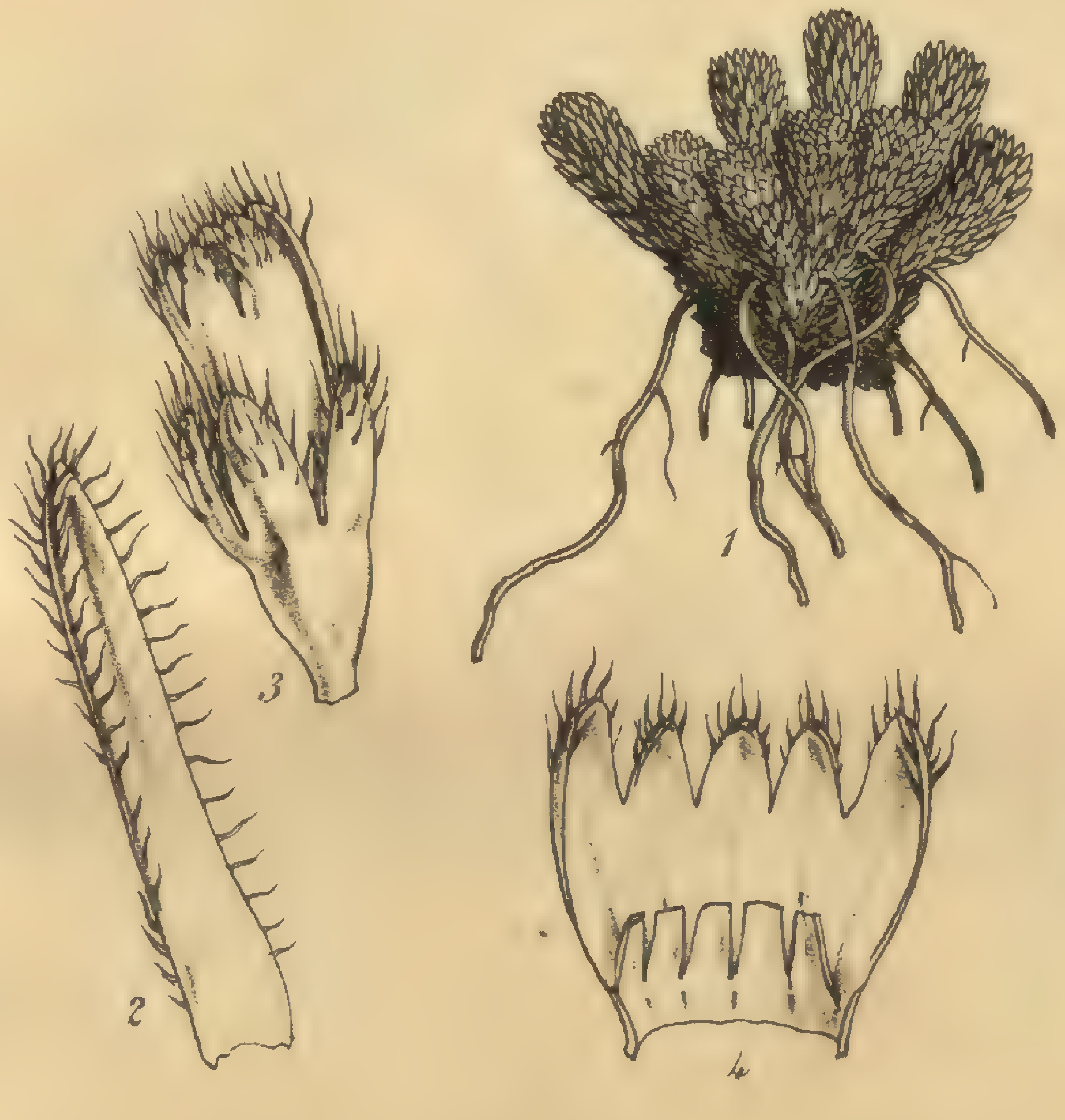
Lisanthus splendens. Hook.



Lysipoma muscoides

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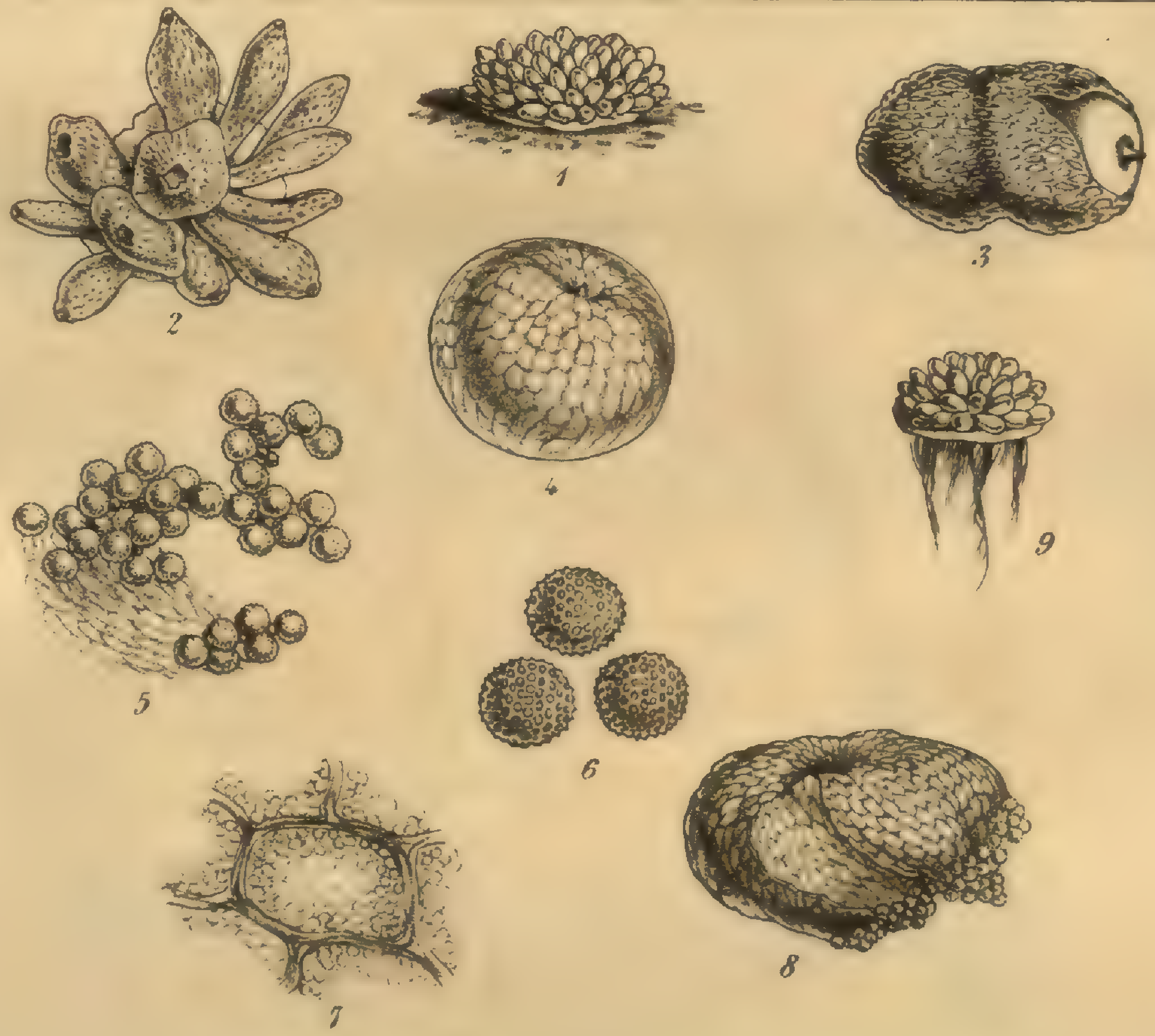

Sphaercarpus terrestris

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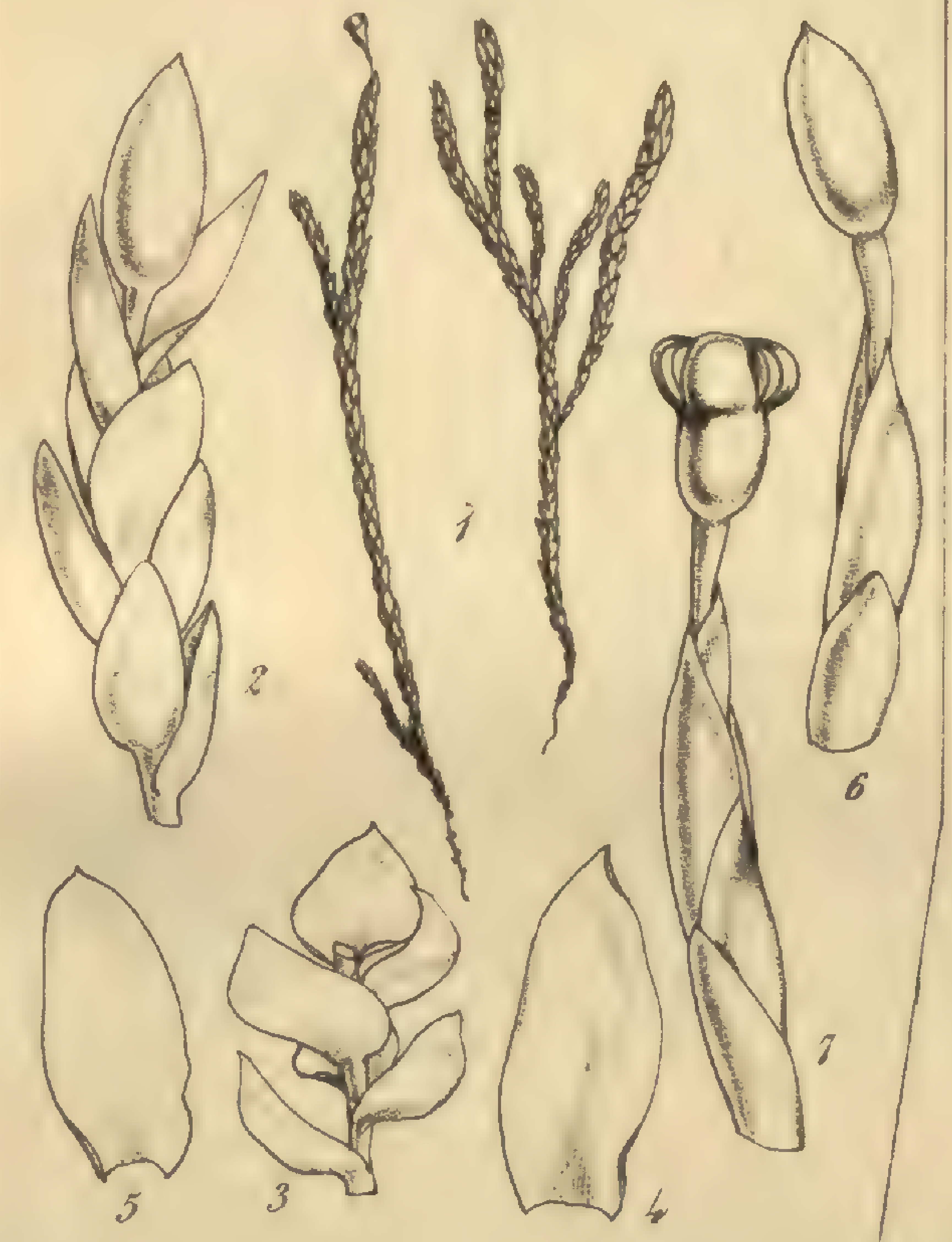
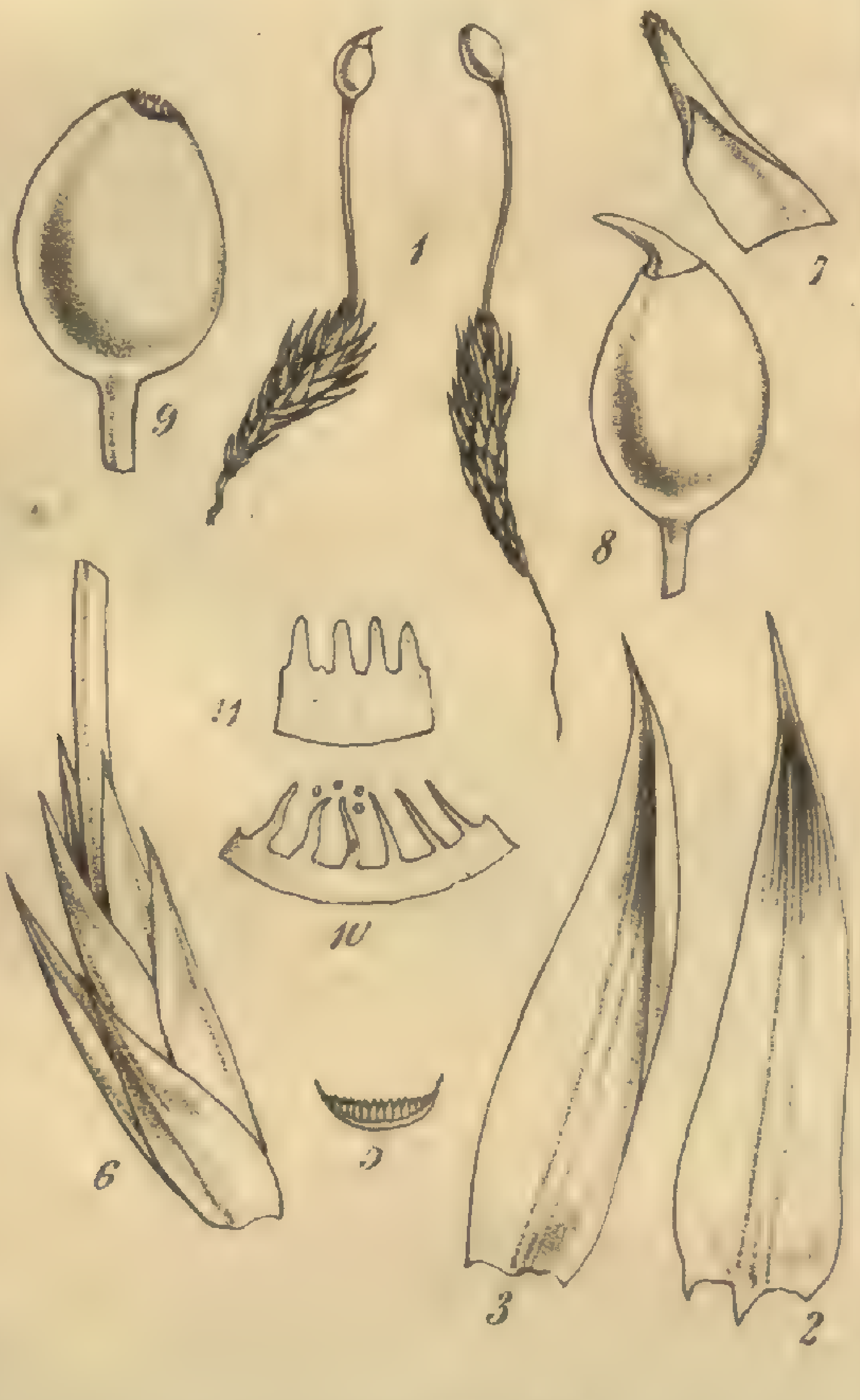


And. subenervis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Pol. trichodes.

Pol. ciliatum.

W Wilson delt

London; H.Bailliere Regent St.

VI

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Dier. sclerocarpum

Neck densa

Dier speciosum

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Cardamine picta

W Fitch.

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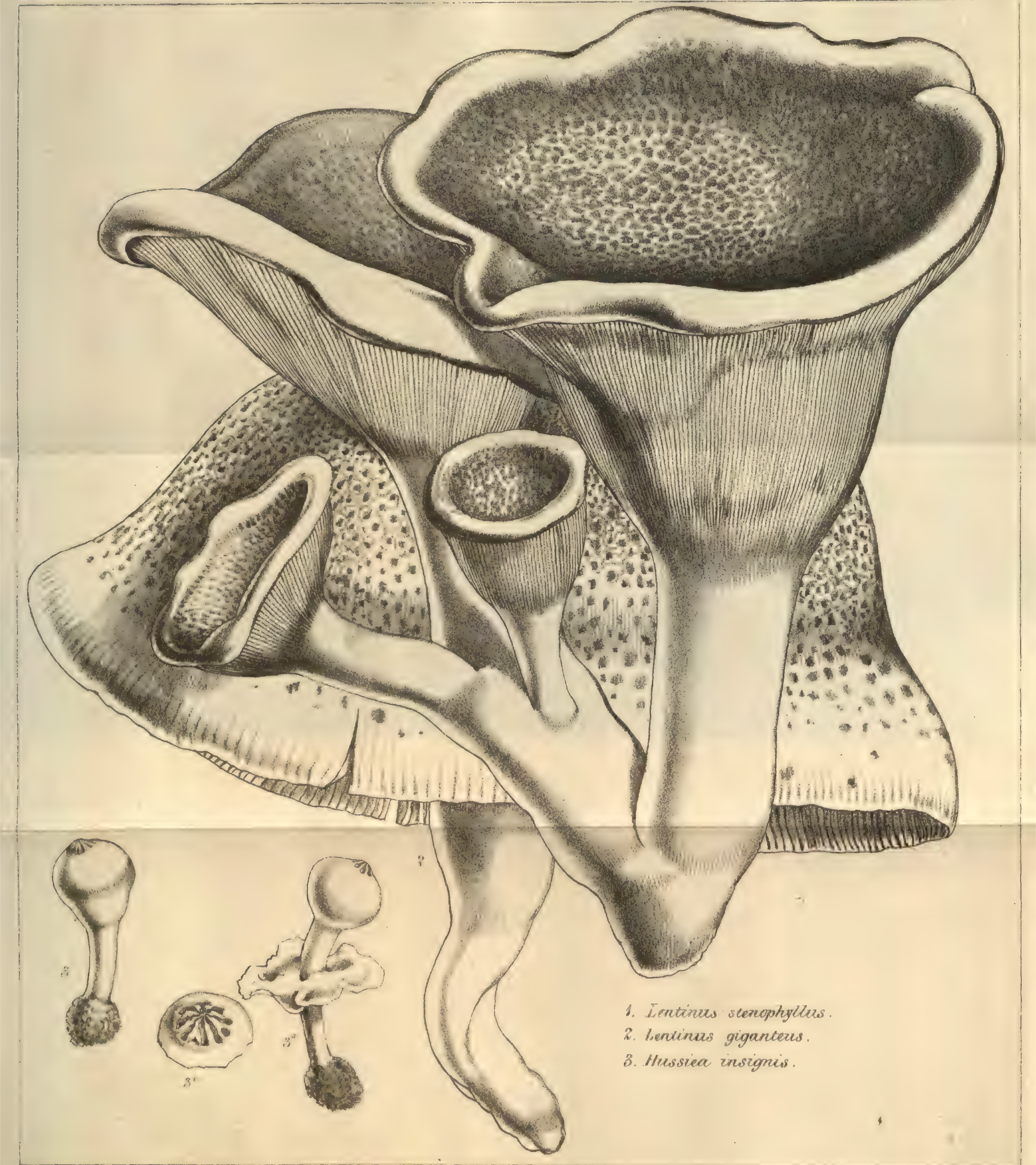

1. *Lentinus stenophyllus.*
2. *Lentinus giganteus.*
3. *Hussiea insignis.*

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Fig 1. Hussiea insignis.

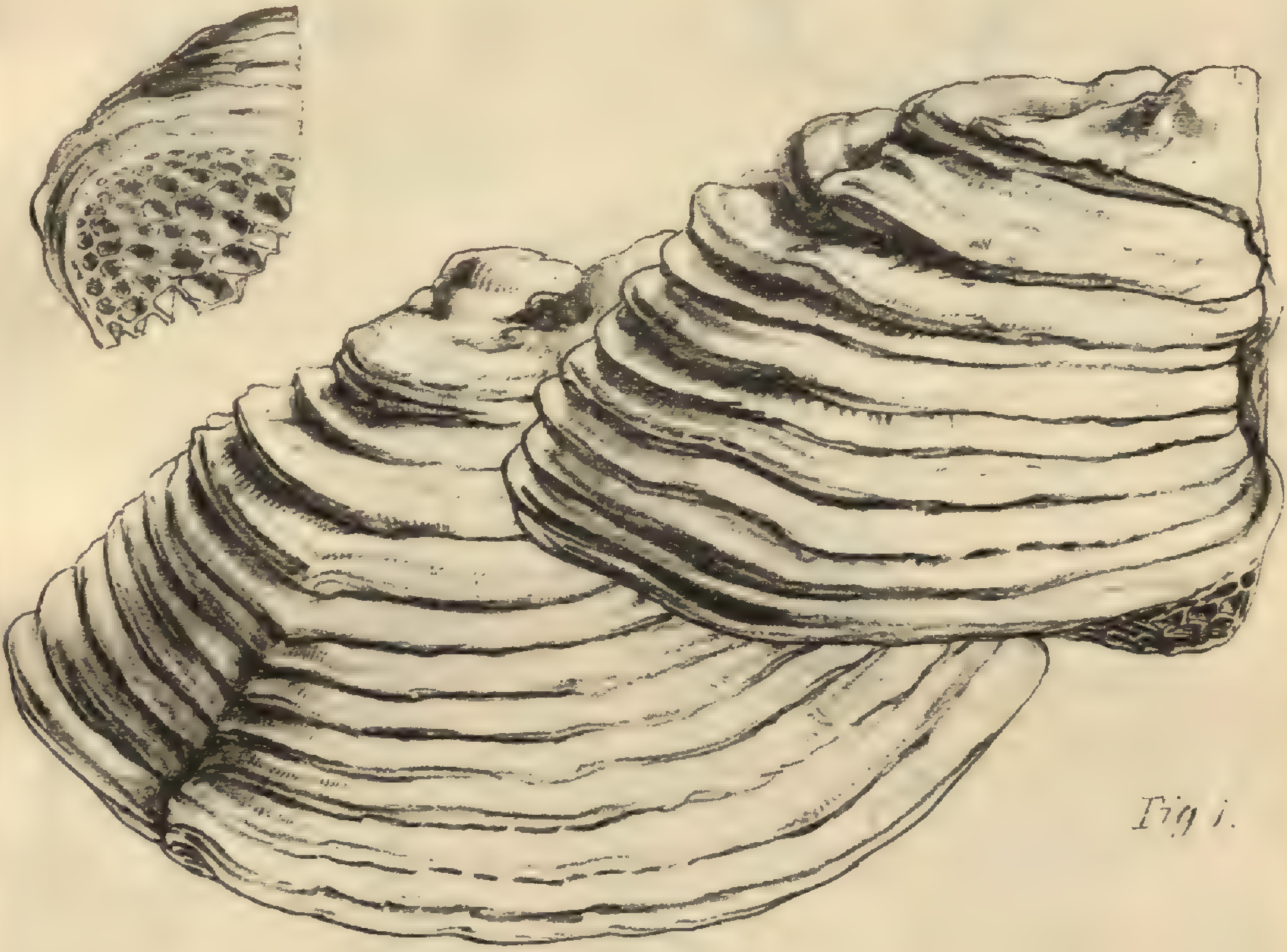
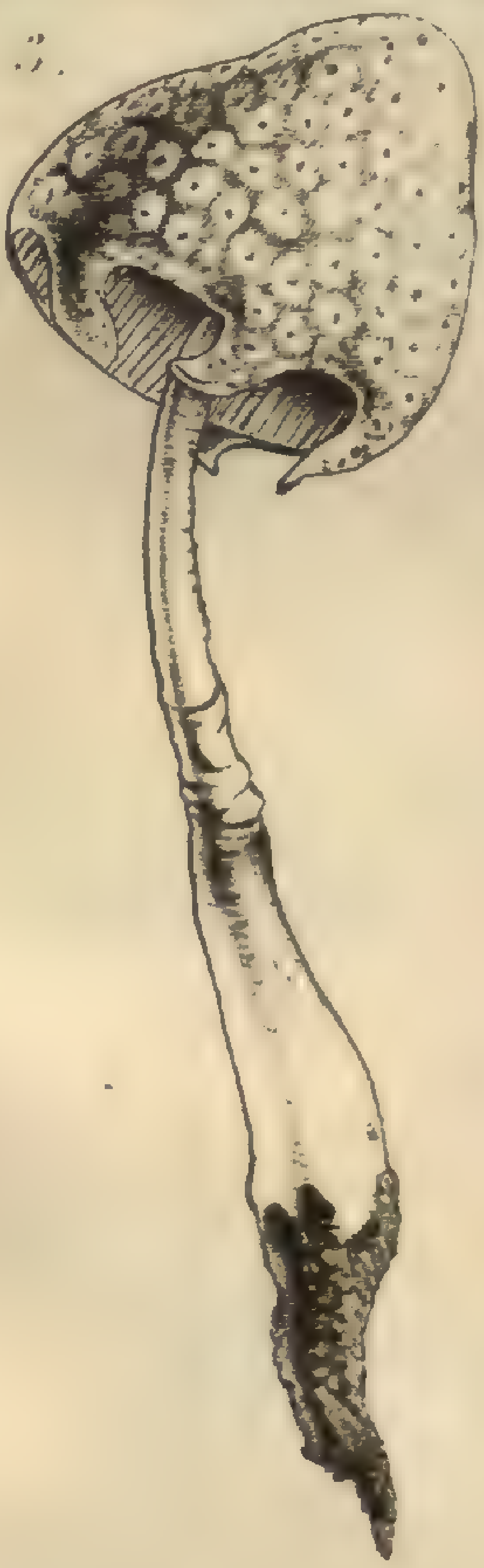


Fig 1.

Hexagona sulcata

Fig 3.



Agaricus Albuminosus

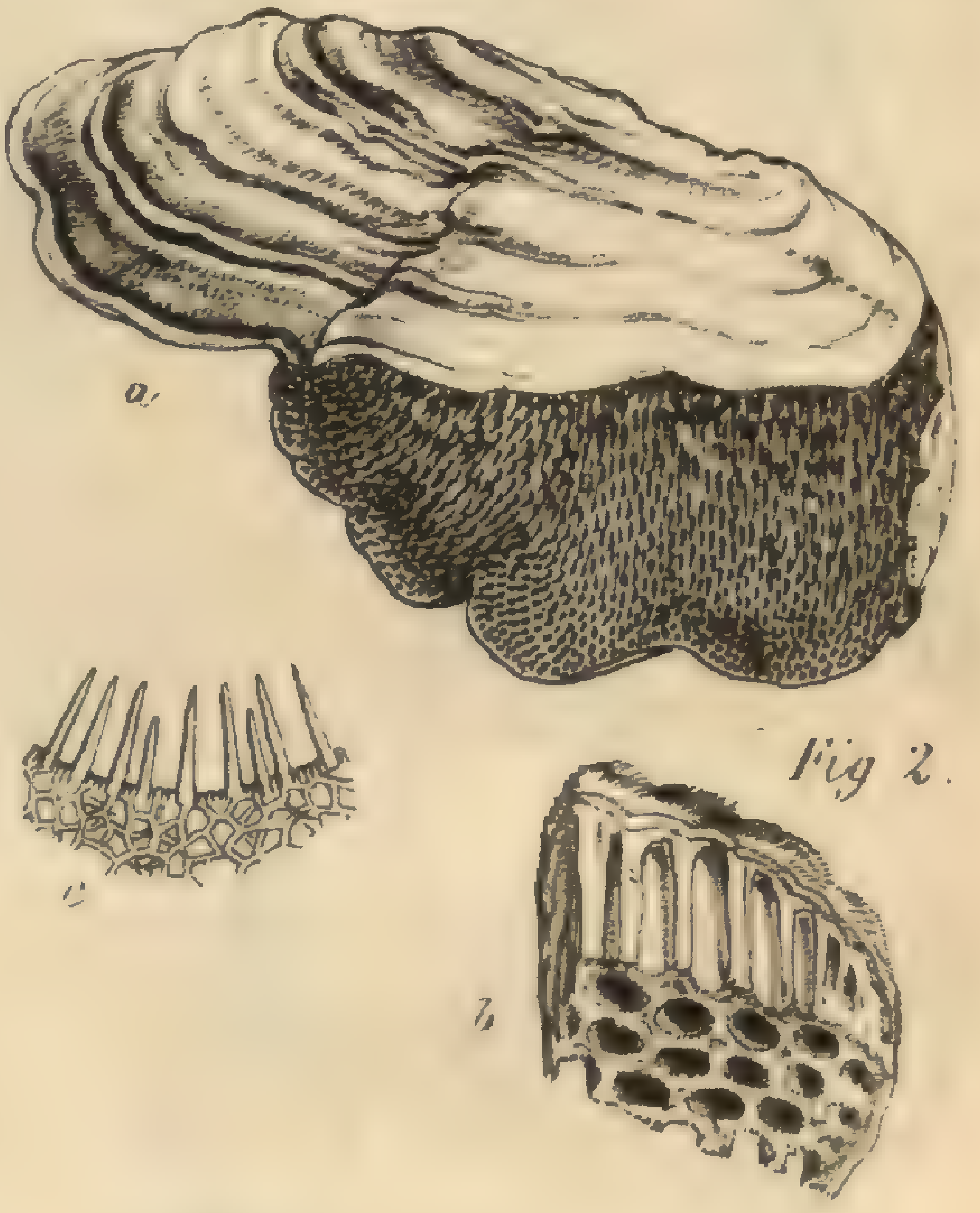


Fig 2.

Polyporus setiporus.

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Ur. populneum
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Urostigma Tweedianum.

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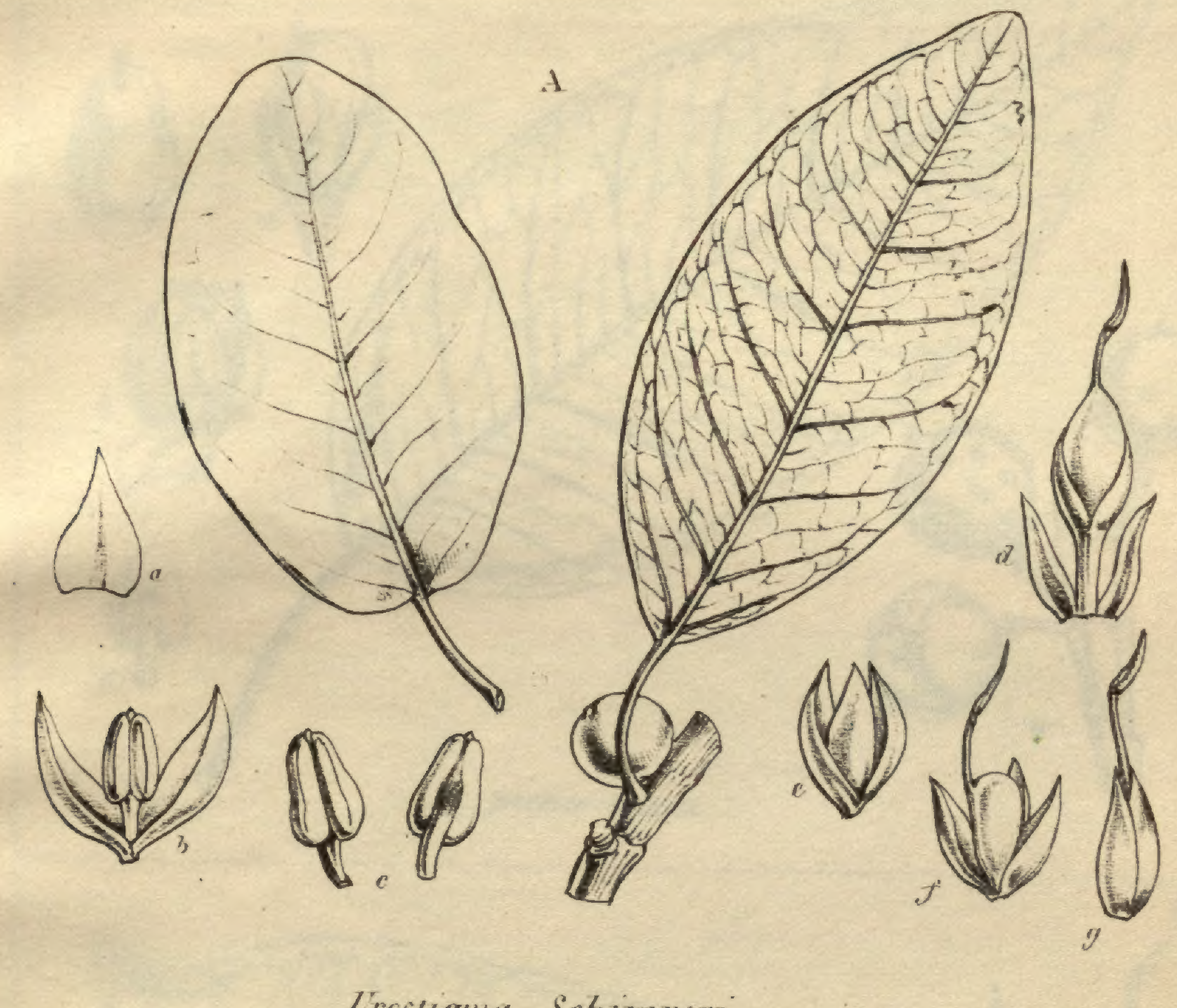
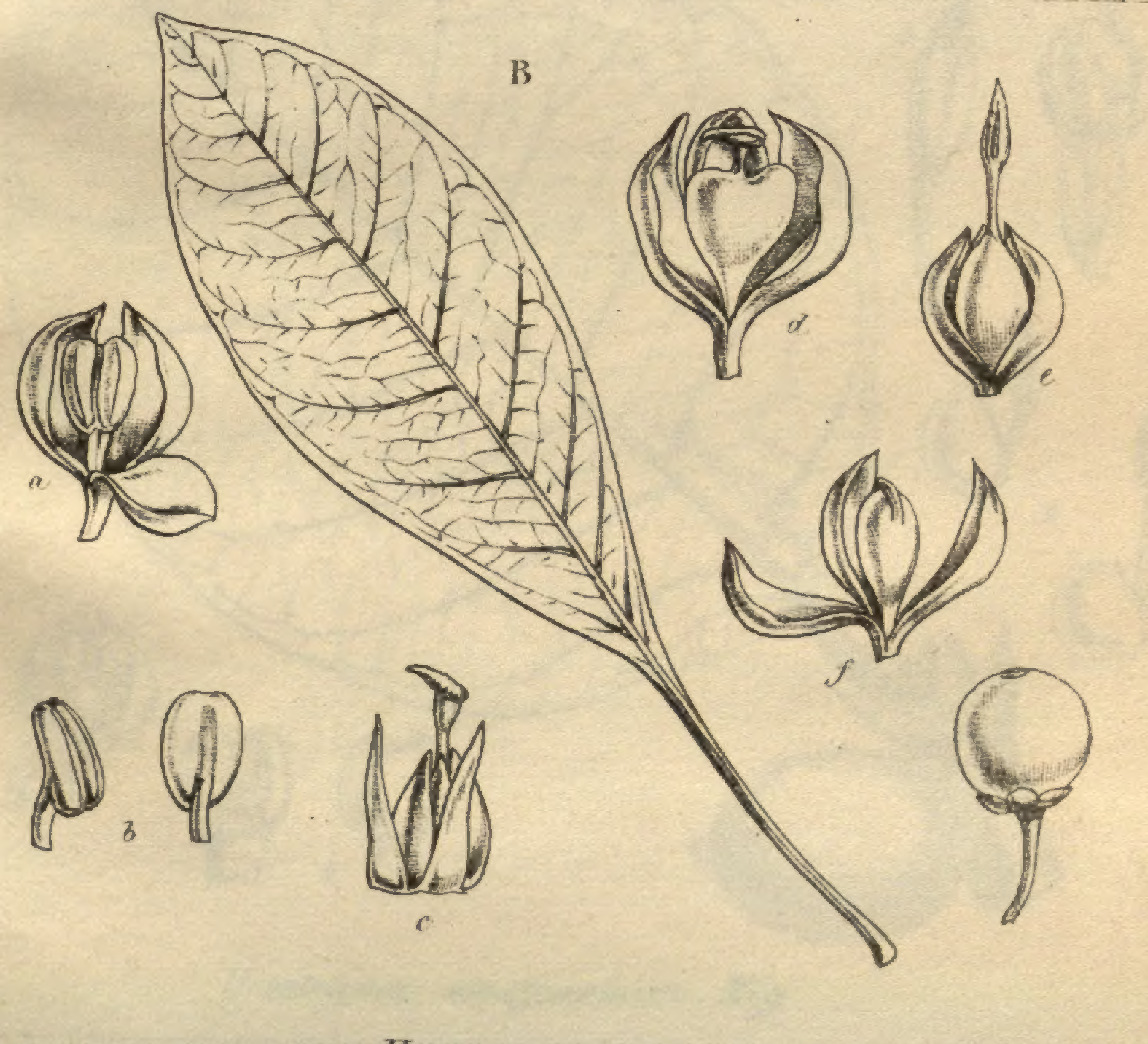


Urostigma Schimperi.



Ur. acrocarpum.

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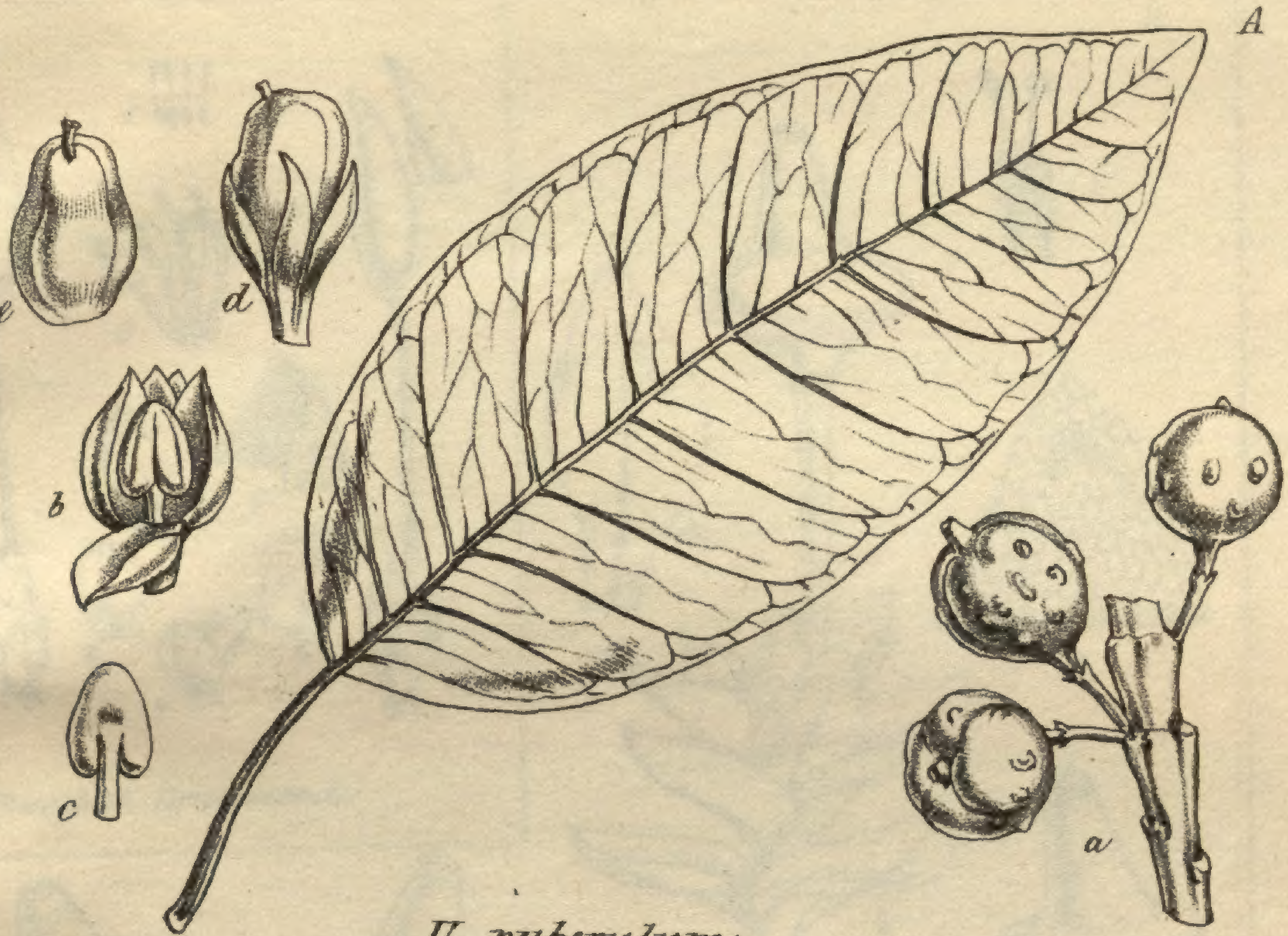
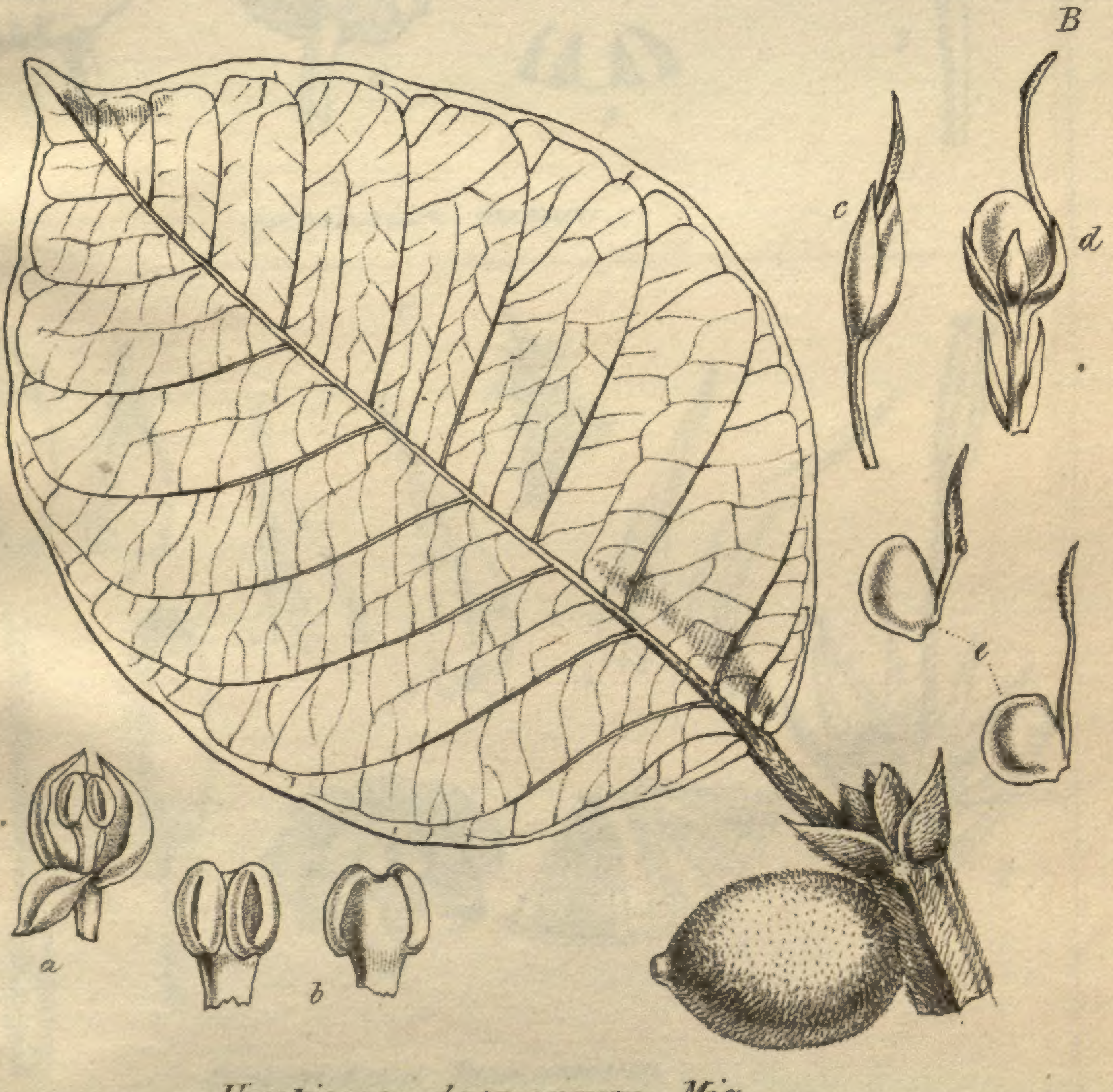


U. puberulum.



Urostigma dasycarpum. Mig.

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Phascum Drummondi.

Splachnum Gunnii.

Orthotrichum Tasmanicum.

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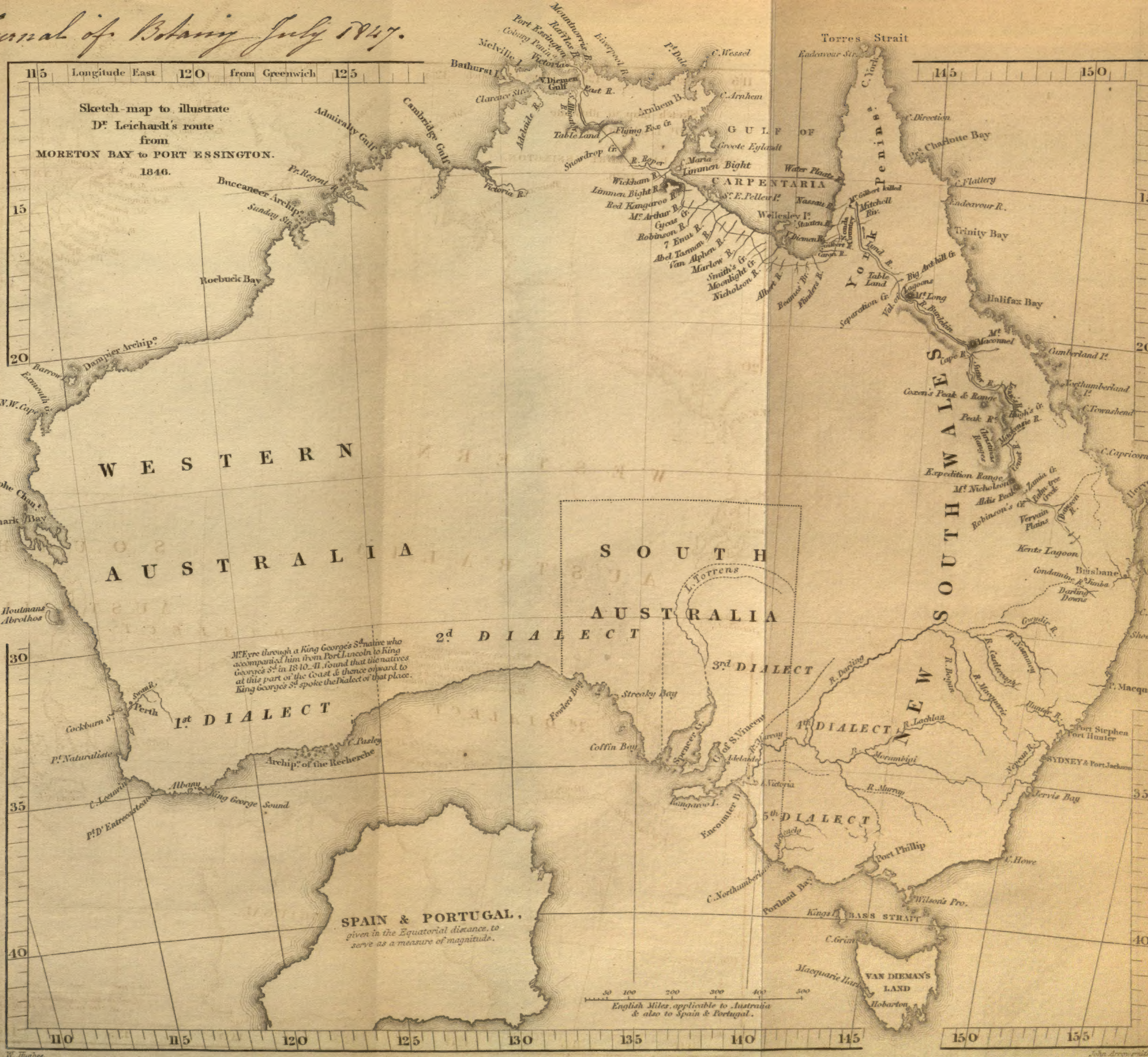

Sketch-map to illustrate Dr. Leichardt's route from MORETON BAY to PORT ESSINGTON. 1846.

Longitude East
from Greenwich
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140
155
Torres Strait
Endeavour Str.
C. York
C. Wessel
Pt. Dale
Liverpool R.
Mountnorris B.
Raffles B.
Port Essington
Coburg Penin.
Victoria
Melville I.
Bathurst I.
V. Diemen Gulf
East R.
Clarence Str.
Adelaide R.
Alligator R.
Arnhem B.
C. Arnhem
Table Land
Flying Fox Cr.
Snowdrop Cr.
R. Roper
Maria
Limmen Bight
GULF OF CARPENTARIA
Groote Eylandt
Water Plaats
Wickham R.
Limmen Bight R.
Red Kangaroo R.
Sir E. Pellew I.
Mc Arthur R.
Cycas Cr.
Robinson R.
7 Emu R.
Abel Tasman R.
Van Alphen R.
Marlow R.
Smith's Cr.
Moonlight Cr.
Nicholson R.
Albert R.
Beames Br.
Flinders R.
Wellesley Is.
Nassau R.
Staaten R.
V. Diemen R.
Caron R.
Mr. Gilbert killed
Mitchell Riv.
Lynd R.
Table Land
YORK PENINSULA
C. Direction
Pr. Charlotte Bay
C. Flattery
Endeavour R.
Trinity Bay
Big Ant hill Cr.
Val. of Lagoons
Mt. Long
Separation Cr.
Burdekin
Halifax Bay
Mt. Maconnel
Cape R.
Suttor R.
Isaacs R.
Cumberland Is.
Northumberland Is.
C. Townshend
Coxen's Peak & Range
Peak Rs.
Mackenzie R.
Christmas Ranges
Comet R.
Expedition Range
Mt. Nicholson
Zamia Cr.
Palm-tree Creek
Aldis Peak
Robinson's Cr.
Vervain Plains
Dawson R.
C. Capricorn
Hervey Bay
Kents Lagoon
Brisbane
Moreton B.
Condamine R.
Jimba
Darling Downs
C. Byron
Shoal Bay
Gwydir R.
R. Namoi
R. Castlereagh
R. Macquarie
R. Bogan
R. Darling
Hunter R.
Pt. Macquarie
Port Stephen
Port Hunter
SYDNEY & Port Jackson
Nepean R.
R. Lachlan
Morumbidgi
R. Murray
Jervis Bay
C. Howe
Wilson's Pro.
Port Phillip
Portland Bay
C. Northumberland
Kings I.
BASS STRAIT
C. Grim
Macquarie Harr.
VAN DIEMAN'S LAND
Hobarton
NEW SOUTH WALES
Admiralty Gulf
Cambridge Gulf
Victoria R.
Pr. Regent R.
Buccaneer Archipo.
Sunday Str.
Roebuck Bay
Dampier Archipo.
Barrow I.
Exmouth G.
N.W. Cape
Geographe Chan.
Shark Bay
Houtmans Abrolhos
WESTERN AUSTRALIA
SOUTH AUSTRALIA
L. Torrens
2d DIALECT
3rd DIALECT
1st DIALECT
4th DIALECT
5th DIALECT
Mr. Eyre through a King George's Sd. native who accompanied him from Port Lincoln to King George's Sd. in 1840–41, found that the natives at this part of the Coast & thence onward to King George's Sd. spoke the Dialect of that place.
Swan R.
Perth
Cockburn Sd.
Pt. Naturaliste
C. Leeuwin
Pt. D'Entrecasteaux
Albany
King George Sound
Archipo. of the Recherche
C. Pasley
Fowlers Bay
Streaky Bay
Coffin Bay
Spencer G.
G. of S. Vincent
R. Murray
Adelaide
L. Victoria
Kangaroo I.
Encounter B.
SPAIN & PORTUGAL,
given in the Equatorial distance, to serve as a measure of magnitude.
50
100
200
300
400
500
English Miles, applicable to Australia & also to Spain & Portugal.

W. Hughes.

John Arrowsmith

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